

Infantry

September-October 1994



"I was beginnin' to think nobody was home."

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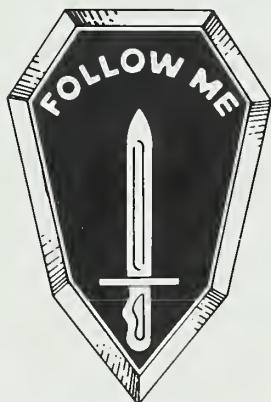
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TOGO D. WEST, JR.
Secretary of the Army

MG JERRY A. WHITE
Commandant, The Infantry School

RUSSELL A. ENO
Editor, INFANTRY



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Infantry

September–October 1994

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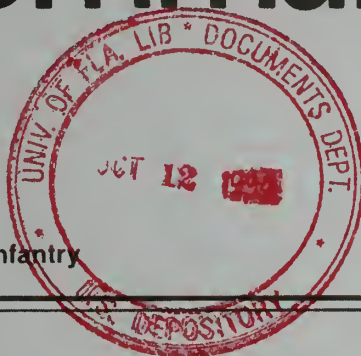
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FRONT COVER: From *Bill Mauldin's Army* (Presidio Press, 505B San Marin Drive, Suite 300, Novato, CA 94945). Price: \$14.95 Softcover, \$30.00 Hardcover. Reprinted with permission of the publisher.

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Commandant's NOTE



MAJOR GENERAL JERRY A. WHITE Chief of Infantry

THE INFANTRY—ACHIEVEMENTS AND CHALLENGES

The Commandant's Note in the November-December 1991 issue of *INFANTRY* was my first as Chief of Infantry, and the nearly three years since its publication have been exciting and challenging ones: exciting in terms of the initiatives we have implemented and challenging in terms of what remains to be done to ensure the readiness of the infantry force in a rapidly changing world. In this, my final Commandant's Note, I want to talk about the progress our branch has made, and what we need to do to ensure that it continues to perform its vital role as we enter the next century.

We live in a dangerous world; nations and societies are in crisis all around us, and amid all this our nation stands both as an example and as a source of hope. The example we offer derives from the stability of our society and its institutions, and the hope we extend to a troubled world comes from the humanitarian aid and peacekeeping forces we have deployed around the globe. We have been tested and have met the challenge, but if we are to remain a leader among nations for long, we must retain that credible degree of deployable military strength that will both reassure our allies and deter those who would be our enemies.

Tomorrow's threat may materialize anywhere between the poles, from the desert to the streets of a city, or on terrain ranging from the plains of western Europe to the Balkans, and it will not always be fought in traditional ways. Today, operations other than war will demand more and more of our attention, and it is infantrymen who can best participate in such efforts. Recognizing this, the Infantry School has taken the lead in developing and fielding the doctrinal literature, the training initiatives, and the technological improvements in equipment to support the conduct of such operations. The infantry has found ready application in the security and peacekeeping challenges of operations other than war, but its value is not limited to those missions.

History is replete with examples of the Infantry's ability to deny the use of built-up areas; to travel over extended distances, strike hard, and melt away before the enemy can react; to force the enemy to commit an inordinately large force in terrain not of his own choosing; and to draw support from a willing civilian population while disrupting lines of communication. An Infantry force has a greater degree of self-sufficiency than perhaps any other, and we must not lose sight of this quality as we decide what the Army of the next century will look like.

Tomorrow's threat outside the area of operations other than war may well call for a combined arms effort, but that may not always be possible. Even though the infantryman may sometimes have the added advantage of armor and artillery to complement his efforts, we must not forget that he will often have to perform his mission without this support, because the same terrain in which infantry is able to move freely can render armor highly vulnerable and artillery fire problematic.

The Gulf War and subsequent events have highlighted our need to prepare for the contingency of mobile warfare, but we may no longer have the luxury of a long buildup period or the overseas stationing of the troops necessary for immediate response to such crises. This means that the Infantry will remain the centerpiece of a force projection Army, one in which forward deployed units may be replaced by CONUS-based contingency forces and a greater degree of reliance on pre-positioned stocks. To be sure, reinforcing units may arrive as follow-on forces, but the odds are that an Infantry team of highly deployable light and heavy contingency forces will be the first ones in and the last ones out.

We have a lot going for us in this area: the night fighting lead of our Army has yet to be surpassed; such advances as the global positioning system have honed our ability to navigate accurately over land and water;

and laser technology has yielded a range of applications from target acquisition to the ability to degrade an opponent's own target acquisition systems. Further, our Bradley force is undergoing a modernization that will carry us into, and beyond, the year 2020; and an array of improvements to the infantryman's direct and indirect fire weapons will increase his lethality over that of even his Gulf War counterpart.

Behind these initiatives is the Dismounted Battlespace Battle Lab (DBBL) at Fort Benning, which was established—along with Battle Labs at other service schools—to identify and examine new approaches to warfighting across the whole spectrum of doctrine; tactics, techniques, and procedures; training; leader development; organizational design; materiel; and soldier support. The DBBL has been designated the lead TRADOC Battle Lab to conduct an Advanced Warfighting Experiment (AWE) in Fiscal Year 1996. The effort will be AWE 96-02, and will employ more than 60 digitizations and own the night (OTN) initiatives to develop warfighting payoffs in enhanced lethality, survivability, and tempo; digital inter-connectivity between light, heavy, and Special Operations forces, and joint services; and to examine future organizational design for light forces as candidates for Force XXI.

The Infantry School's Holistic Review of Infantry (HRI), discussed in the May-June 1994 Commandant's Note, parallels the Army's Force XXI modernization initiative to tailor the force to meet the expected threat of the year 2005. During HRI, the whole spectrum of the Infantry structure—from fire team to battalion—is being studied and modified, using lethality as the basis of change.

For the first time, we have the means to reduce dupli-

cation of effort, increase the return for each defense dollar, and put new equipment in the hands of the soldier—where it needs to be—faster than ever before. But equipment is only half of the equation; equally important is training, and that includes the training of both the soldier and those who will lead him in combat.

Now, more than ever, our Army needs high-quality infantry leaders, and the only way we're going to get them is to train them. The common denominator in any Army is the soldier, and we must continue to develop leaders who can train him, see to it that he is supported, and effectively lead him in combat. The quality of our leaders will determine how well the soldier does his job, and in the long run their success will determine the degree of credibility and respect the United States enjoys in its dealings with other nations.

The training of our future leaders, therefore, is an investment that we absolutely must make, even now, when other pressing needs demand our attention and our commitment of assets. The Army has taken significant budget cuts across the board that have affected our acquisition of weapon systems, facilities, manpower, and training, with the effect on training being the most ominous. In every war in our Army's history, it has been the well-trained soldier who has made the difference, and in every case in which poorly trained men and leaders have been sent into combat, lives have been squandered.

We have heard a great deal about avoiding any repetition of the mistakes of the past; now we have a chance to put that noble sentiment into action. The Army absolutely has to be the best trained in our Nation's history, because neither our Nation nor the world can afford for it to be otherwise.



INFANTRY LETTERS



EVEN HEROES ARE HUMAN

As we continue to commemorate World War II, it is important to recall the many soldiers whose courage and sacrifice made the final victory possible. The after-action reports of the Second World War have highlighted many achievements of American soldiers, and it is in the recollection of those events that we remember the courage and leadership that spelled the difference between victory and defeat. These traits are as important today as they were 50 years ago, for today's combat soldier will likely face many of the same challenges as his counterparts of the past.

While not all leaders are necessarily heroic, and some heroes may not automatically be good leaders, Colonel Cecil "Bull" Bolton was a man who combined the best qualities of both, serving his nation in combat during two wars. Originally commissioned in the Army Reserve, he earned the Medal of Honor while a member of Company E, 413th Infantry, 104th Infantry Division. On the night of 2 November 1944, his unit crossed the Mark River in Holland, came under intense enemy artillery fire, and was immediately pinned down by a pair of German machineguns whose incessant grazing fire prevented the unit from maneuvering. Lieutenant Bolton was wounded almost immediately in both legs by shell fragments.

Although painfully wounded, he directed mortar fire against the machineguns, and when this proved ineffective he led a bazooka team in search of the enemy positions. Wading the icy, chest-deep waters of a canal, he maneuvered to within 15 yards of the first of the guns and destroyed the emplacement with two hand grenades. Lieutenant Bolton then led his men through heavy enemy fire in search of the second machinegun. He quickly shot an enemy sniper who

tried to stop their advance, but this alerted the machinegun crew, who turned to engage them; Lieutenant Bolton shot the gunner while his men killed the rest of the crew.

By now his unit was receiving direct fire from an 88mm gun; again entering the canal, Bolton and his men maneuvered to a position from which they could take the gun under fire. With Lieutenant Bolton providing covering fire, the bazooka team knocked out the gun. He was again wounded while returning to friendly lines; fearing for the safety of his men, he ordered them to leave him and crawled back to his unit's position, where he collapsed. Eventually recovering from his wounds, Lieutenant Bolton went on to earn a Silver Star and a Bronze Star for bravery before the war in Europe ended. He was promoted to captain and returned to the United States, where President Harry S. Truman presented the Medal of Honor in a White House ceremony. At the conclusion of the ceremony, President Truman shook Captain Bolton's hand and said, "Captain, if I can ever do anything for you, please don't hesitate to call on me." Captain Bolton, realizing that the career prospects of a Reserve officer in a small peacetime Army were not bright, replied that he would like a Regular Army commission; the President replied, "Consider it done!"

He went on to fight in the Korean War, where he was again decorated for bravery in action. In Korea, as during World War II, he remained close to his men. His affinity for working with and taking care of troops earned him their respect and trust. Honesty—then, as now—was fundamental to leadership, and "Bull" Bolton treated his troops like men, never talking down to them, and giving them straightforward, honest answers. Whether warning them about predatory bar girls, card sharks, or the

dangers of combat, he was an effective speaker who could seize and hold the attention of his audience, communicating his message in language understandable to all.

Leading by example remains the most effective form of leadership, and Colonel Bolton continued to demonstrate this principle as commander of the 1st Battle Group, 23d Infantry, at Fort Richardson, Alaska, where I first met him. His unique down-to-earth manner and ingenuous country accent often led others to underestimate him—to their later dismay—but his courage left no room for doubt. Whether taking an armored personnel carrier downrange to demonstrate its protection from small arms and artillery fire, climbing and rappelling on sheer rock walls, or crossing glaciers and mountain streams, "Bull" was always where his troops were, urging them on by his example.

A leader must also train his unit to operate under pressure; he knew from his experience in two wars that in order to survive and win soldiers must be able to react to the unexpected and make decisions under the worst possible conditions. He called alerts at the most unexpected times—on one occasion at the conclusion of the Officers' Club New Year's party—and for periods lasting from a few hours to a week or longer. Those who were improperly prepared were not caught unprepared a second time.

I am confident that all who served with Colonel Bolton learned a great many things which they were later able to put to good use. The best advice he gave me was, "You should tell subordinates what you want them to do, but you shouldn't tell them how to do it." He reasoned correctly that a task became a personal challenge when you had to plan and execute it on your own, without detailed guidance and supervision, and

he made sure that soldiers had the opportunity to learn from their mistakes. His philosophy was, "If you nurture initiative you can develop a platoon, company, division, or even an entire Army that just has to be a winner!"

The essential nature of leadership is not a new concept; it has always been fundamental to success in combat. Colonel Cecil H. Bolton represented two of the best attributes of the leader: courage and the ability to inspire men to accomplish the mission.

JOHN M. HELLER
COL, U.S. Army, Retired

U.S. BATTALION, NOT FRENCH

A friend sent me a copy of *INFANTRY's* March-April 1994 issue containing Major Kevin Benson's article, "Commander's Intent." While I found the piece quite interesting, there is one detail that needs correction.

The article states that the infantry battalion forming part of the task force led by Lieutenant Colonel Creighton Abrams in the World War II relief of Bastogne was "a French battalion." In fact, it was a U.S. Army unit, the 53d Armored Infantry Battalion, 4th Armored Division. Along with Abrams' own 37th Tank Battalion and the 94th Armored Field Artillery Battalion, the battalion formed Combat Command "R" of that division.

The author may have been led to this erroneous conclusion by the apparently French name of the 53d AIB's commanding officer, Lieutenant Colonel George Jaques. In any event, for the record, there were no French units involved in this action.

LEWIS SORLEY
Potomac, Maryland

EDITOR'S NOTE: Our thanks to Mr. Sorley for the correction. The error was not the author's but the editor's. Lewis Sorley is the author of Thunderbolt:

General Creighton Abrams and the Army of His Times, *from which the incident cited in the article was taken. The book was reviewed by Major General (Retired) Albert H. Smith in INFANTRY's March-April 1993 issue, pages 49-50.*

3D MARINE DIVISION AT BOUGAINVILLE

In regard to Stanley A. Frankel's article "Hell 700," in *INFANTRY's* May-June 1994 issue, page 25, I would like to point out that the 1st Marine Division never landed on Bougainville. In fact, it was the 3d Marine Division.

The article certainly does motivate me to go back and refresh my memory on the history of that campaign.

MARTIN L. STEITZ
U.S. Marine Corps, Retired
Sneads Ferry, North Carolina

EDITOR'S NOTE: Mr. Steitz is correct; we checked the reference in Mr. Frankel's book, The 37th Infantry Division in World War II, which confirms that the 1 Marine Amphibious Corps—attack force for the invasion of Bougainville—included the 3d Marine Division, the 37th Infantry Division, and the 8th Brigade Group of the 3d New Zealand Division.

EDITORS' CORRECTION

In the article "Infantrymen in Action: D-Day Landing, 6 June 1944" (*INFANTRY*, May-June 1994, pages 19-24), an editor's note says that Major General Albert H. Smith, Jr., commanded Company L of the 1st Battalion, 16th Infantry, on D-Day. Actually, he commanded that company during the invasion of Sicily in July 1943. At Normandy in June 1944, he served as the battalion's executive officer.

Our apologies to General Smith.

BATTLE OF THE BULGE COMMEMORATION

The 50th Anniversary Commemoration of the Battle of the Bulge will be held 15-18 December 1994 in St. Louis, Missouri.

Complete information regarding the various ceremonies is available from the Veterans of the Battle of the Bulge, P.O. Box 11129-P, Arlington, VA 22210-2129.

NANCY C. MONSON
Administrative Director
Veterans of the Battle of the Bulge

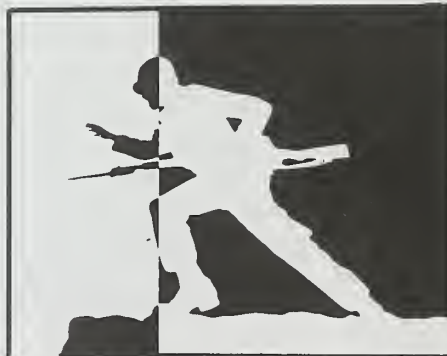
HIGH POWER MICROWAVE TECHNOLOGY CONFERENCE

The Seventh National Conference on High Power Microwave (HPM) Technology will be held 31 October to 4 November 1994 at the Naval Postgraduate School, Monterey, California.

A free short course on HPM effects assessment will be held in connection with the conference on 30-31 October, with attendance open to any conference registrant. The security level of the material to be presented is SECRET/NOFORN.

Additional information is available from HPM Conference Registration Office, P.O. Box 2218, Suffolk, VA 23432; telephone (804) 255-0409, FAX (804) 255-0056.

BRENDA K. VAUGHAN
Assistant Technical
Conference Coordinator



INFANTRY NEWS



THE INDIVIDUAL SOLDIER radio (ISR), being developed under the Soldier Enhancement Program, is projected for fielding in Fiscal Year 1996.

The small lightweight radio will improve intrasquad command and control in training and in all combat scenarios. With it, the transmission of orders and other critical information within the squad will be easier and faster.

The following are the required characteristics for ISR development:

- No larger than 70 cubic inches.
 - Weigh less than 30 ounces, including battery, headset, carrying case, and antenna.
 - Powered by a throwaway or rechargeable battery capable of 12 hours operation.
 - Frequency selected will not interfere with the current combat net radio FM frequency of 30-87.975 megahertz. The ISR will have a preset capability that is externally selectable without any alignment.
 - Range of 700 meters over rolling, slightly wooded terrain. At least 250 meters will be achieved by a soldier in a prone position or operating from a foxhole.
 - Capable of one-handed operation, with multiple input/output capability—internal microphone and speaker, external microphone and speaker (headset)—compatible with the PASGT helmet and load bearing equipment, and capable of accepting a remote push-to-talk switch.
 - Rugged enough to withstand the conditions and stress of combat; not operationally degraded if dropped from a minimum height of one meter, onto the ground, rocks, or other hard surfaces.
- The ISR will increase the individual soldier's effectiveness and situational awareness, especially at night.

BRADLEY CORNER

The Bradley Proponency Office at Fort Benning is developing a revision of Field Manual (FM) 23-1, *Bradley Fighting Vehicle Gunnery*, which is scheduled for distribution during Fiscal Year 1996. This revision is considered necessary because of changes in gunnery strategy and the fielding of new equipment.

First, we are changing from a gunnery strategy with a "Cold War" focus to a more flexible strategy based on contingency missions. This new strategy will allow units to develop gunnery programs that are based on their mission essential task lists (METLs) and conditions of mission, enemy, troops, terrain, and time (METT-T).

In addition, the M2A2/M3A2 Operation DESERT STORM (ODS) Bradley is to be fielded in FY 1996. It will be equipped with an eyesafe laser rangefinder, the global positioning system with digital compass system, a driver's thermal viewer, and an improved vehicular intercom system. These vehicles are designed to accept the battlefield combat identification system (BCIS) and a missile counter-measure device. Other major events reflected in the FM revision are the fielding of the precision gunnery system, the thru-sight video, and Bradley-equipped air defense artillery units.

The revised FM 23-1 will consist of two volumes in the same size as FM 7-7J, stapled and punched. Soldiers will be able to place both volumes in either an Army black binder or a green TM-type binder for protection. Soldiers can build their own books to fit their

needs and keep them on the vehicles instead of bookshelves.

FM 23-1, Volume 1, titled *Crew Member's Handbook*, will contain information specific to the vehicle and the crew members. Some of the subject areas are vehicle and weapon system characteristics, target acquisition, fire commands, engagement techniques, fire control and distribution, weapon system checks and malfunctions, and gunnery training objectives.

Volume 2, titled *Trainer's Handbook*, will contain the training-manager information a master gunner needs to build and sustain a successful gunnery program. The chapters in this volume are Bradley Training Program, Training Devices, Ranger Operations, Gunnery Evaluation, and Gunnery Training from Preliminary to Tactical. Cavalry and air defense tactical gunnery training are covered in separate chapters. Training Circular 23-5, *BFV Training Devices*, has been incorporated into the chapter on training devices.

The appendixes will be in Volume 2, covering the Bradley Gunnery Skills Test, boresighting and testing procedures, limited visibility gunnery, and scaled ranges. A new appendix will provide the basics of combat vehicle identification.

Anyone who has comments or suggestions for this revision is invited to write Commander, 1st Battalion, 29th Infantry, ATTN: ATSH-INA-BPO, Ft. Benning, GA 31905; call DSN 784-6201, commercial (706) 544-6201; or FAX DSN 784-6751, commercial (706) 544-6751.

THE TABLE shown here lists all infantry doctrine and training literature published to date, along with DA Form 12 block numbers. It is intended as a quick-reference aid for units in ordering these publications.

Obviously, such an extensive list cannot be published often, but the literature updates that appear from time to time in the Infantry News section can be used to supplement this list.

A PARACHUTIST ANKLE brace has been shown to reduce the incidence of ankle injuries in initial airborne training as well as in an operational airborne environment.

The initial study involved almost 800 airborne students at Fort Benning, Georgia. The incidence of ankle sprains in the test was 1.8 percent among the students without the braces and .3 percent



among those with braces. Shortly after completion of this study, the airborne school began furnishing braces to all their students. Subsequently, students had 52 percent fewer ankle sprains than historical norms and 80 percent fewer fractures.

PUBLISHED INFANTRY DOCTRINE AND TRAINING LITERATURE			
MANUAL NUMBER	TITLE	PUBLICATION DATE	DA FORM 12 BLOCK NO.
ARTEP 7-7J-Drill	BFV Battle Drills	12/08/92	1438
ARTEP 7-8-Drill	Battle Drills for the Infantry Rifle Platoon and Squad	11/03/93	0767
ARTEP 7-8-MTP	MTP for the Infantry Rifle Platoon and Squad	09/30/88	0768
ARTEP 7-10-MTP	MTP for the Infantry Rifle Company	10/03/88	0769
ARTEP 7-20-MTP	MTP for the Infantry Rifle Company	12/27/88	0162
ARTEP 7-30-MTP	MTP for the Infantry Brigade (Command Group/Staff)	02/17/89	0854
ARTEP 7-90-Drill	Drills for the Infantry Mortar Platoon, Section, and Squad	02/14/90	0770
ARTEP 7-90-MTP	MTP for the Infantry Mortar Platoon, Section, and Squad	08/10/89	0822
ARTEP 7-91-Drill	Drills for the Antiarmor (TOW) Platoon, Section, and Squad	02/15/90	0362
ARTEP 7-91-MTP	MTP for the Antiarmor Company/Platoon/Section	10/12/89	0823
ARTEP 7-92-MTP	MTP for the Infantry Scout Platoon/Squad and Sniper Team	03/16/89	0824
ARTEP 7-93-MTP	MTP for the Long-Range Surveillance (Hvy/Lt) Company/ Detachment Team	12/27/88	0782
ARTEP 7-94-MTP	MTP for the Infantry Battalion HHC and CS/CSS Platoon	10/12/89	0855
ARTEP 71-2-MTP	MTP for the Tank and Mechanized Infantry Battalion Task Force	10/03/88	0776
FM 7-7	The Mechanized Infantry Platoon and Squad (APC)	03/15/85	0222
FM 7-7J	The Mechanized Infantry Platoon and Squad (Bradley)	05/07/93	0794
FM 7-8	The Infantry Rifle Platoon and Squad	04/22/92	0782
FM 7-10	The Infantry Rifle Company	12/14/90	0078
FM 7-20	The Infantry Battalion	04/06/92	0079
FM 7-30	The Infantry Brigade	04/24/81	0783
FM 7-85	Ranger Unit Operations	06/09/87	0136
FM 7-90	Tactical Employment of Mortars	10/09/92	0801
FM 7-91	Tactical Employment of Antiarmor Platoons, Companies and Battalions	09/30/87	0802
FM 7-92	Infantry Recon Platoon and Squad (Airborne, Air Assault, Light Infantry)	12/23/92	4894
FM 7-93	Long-Range Surveillance Unit Operations	06/09/87	0804
FM 7-98/ FMFRP 7-8-1	Operations in a Low-Intensity Conflict (LIC)	10/19/92	4766
FM 21-18	Foot Marches	06/01/90	0164
FM 21-20	Physical Fitness Training	09/30/92	0165
FM 21-26	Map Reading and Land Navigation	07/05/93	0166
FM 21-60	Visual Signals	09/30/87	0173
FM 21-150	Combatives	09/30/92	0176
FM 22-5	Drill and Ceremonies	12/08/86	0178
FM 23-1	Bradley Fighting Vehicle Gunnery	03/01/91	0469
FM 23-9	M16A1 and M16A2 Rifle Marksmanship	03/07/89	0187
FM 23-10	Sniper Training and Employment	08/17/94	1335
FM 23-14	M249 Light Machine Gun in the Automatic Rifle Mode	01/26/94	1059

A second study was conducted using approximately 450 soldier volunteers of the 82d Airborne Division from Fort Bragg, North Carolina. This study was conducted under operational conditions, including nighttime jumps with full combat loads and full follow-on mis-

sions. Preliminary results revealed six times as many ankle sprains among soldiers without braces than with braces.

The ankle brace, made of an alloy of acrylic and polyvinyl chloride (PVC), was chosen for its rigidity and impact resistance. Further testing is under way

**PUBLISHED INFANTRY DOCTRINE
AND TRAINING LITERATURE (CONT'D)**

MANUAL NUMBER	TITLE	PUBLICATION DATE	DA FORM 12 BLOCK NO.
FM 23-24	Dragon Medium Antitank/Assault Weapon System, M47	04/03/90	1338
FM 23-25	Light Antiarmor Weapons	08/17/94	4321
FM 23-27	MK 19, 40-mm Grenade Machine Gun, MOD 3	12/27/88	4324
FM 23-30	Grenades and Pyrotechnic	12/27/88	0196
FM 23-31	40-mm Grenade Launcher, M203	05/01/72	0197
FM 23-34	TOW Weapon System	08/17/94	3885
FM 23-35	Combat Training with Pistols and Revolvers	10/03/88	0200
FM 23-65	Browning Machine Gun, Caliber .50, HB, M2	06/19/91	0203
FM 23-67	Machine Gun, 7.62-mm, M60	02/29/84	0204
FM(M) 23-90	Mortars (TO 11W2-5-13-21)	09/19/90	0209
FM 23-91	Mortar Gunnery	12/06/91	0470
FM 57-38	Pathfinder Operations	04/09/93	0401
FM(M) 57-220	Basic Parachuting Techniques and Training (TO 14D1-2-2/FMFM 7-41)	06/01/90	1224
FM(M) 57-230	Advanced Parachuting Techniques and Training (TO 14D1-2-1-121/FMFM 7-42)	09/13/89	1442
FM 71-2	The Tank and Mechanized Infantry Battalion Task Force	09/27/88	0506
FM 90-4	Air Assault Operations	03/16/87	0400
FM 90-5	Jungle Operations	08/16/82	0307
FM 90-8/ FMFRP 7-8-3	Counter guerrilla Operations	08/29/86	1231
FM 90-10-1	An Infantryman's Guide to Urban Combat	05/12/93	1232
FM 90-26	Airborne Operations	12/18/90	4655
STP 7-11BCHM-SM-TG	Soldier's Manual, MOS 11B/C/H/M, and Trainer's Guide, Infantryman	09/30/88	4382
STP 7-11C-SM-TG	Soldier's Manual, MOS 11C, and TG, Indirect Fire Infantryman	08/16/94	4456
STP 7-11H-SM-TG	Soldier's Manual, MOS 11H, and TG, Heavy Antiarmor Weapons Infantryman	09/30/88	4457
STP 7-11M-SM-TG	Soldier's Manual, MOS 11M, and TG, Fighting Vehicle Infantryman	09/30/88	4458
STP 7-11II-MQS	MQS II, Infantry Branch (II) Company Grade Officer's Manual	07/16/91	3407
TC 7-9	Infantry Live-Fire Training	09/30/93	5146
TC 21-3	Soldiers' Handbook for Individual Operations and Survival in Cold Weather Areas	03/17/86	1325
TC 21-21	Water Survival Training	06/30/91	4666
TC 21-24	Rappelling	09/24/91	5059
TC 23-2	90-mm Rocket Launcher, M202A1	04/07/78	1331
TC 23-5	Bradley Fighting Vehicle Training Devices	05/13/91	4442
TC 90-1/ FMFRP 7-15-1	Military Operations on Urbanized Terrain Training	09/30/93	3858
TC 90-6-1	Military Mountaineering	04/26/89	1444

to confirm the data before the ankle brace is fully incorporated into the airborne soldier's equipment.

THE AT8 BUNKER defeat munition has successfully completed technical design and operational testing by the

U.S. Army Armament Research, Development, and Engineering Center. During these tests, more than 200 weapons were fired against a variety of urban targets, including bunkers, light armor, and concrete walls.

The AT8 is a lightweight, disposable, multipurpose direct fire weapon

designed for urban warfare. It combines the Army's M136 launch tube and propulsion system with the warhead and fuze from the Marine Corps' shoulder-fired multipurpose assault weapon (SMAW). Because the launchers are the same, the preparation-to-fire sequence of the AT8 is identical to that of the M136, which eliminates the need for new infantry training or logistical support equipment and effort.

The AT8 has a self-discriminating fuze that enables it to distinguish between hard and soft targets. On impact with a bunker, it delays detonation until the warhead has buried itself inside the bunker wall. Against hard targets, such as light armor or walls, the fuze detonates the warhead on impact.

The weapon is expected to be type classified and fielded to the first units during Fiscal Year 1995.

THE U.S. ARMY Officer Candidate Alumni Association, Inc., is planning a membership meeting and reunion to be held at Fort Benning 27-30 April 1995. Included on the schedule will be a briefing on the current status of OCS, a visit with officer candidates, visits to the National Infantry Museum and the OCS Hall of Fame, along with a dinner, a reception, and a memorial service.

Anyone who is interested in additional information about the reunion or the Association may write to The U.S. Army Officer Candidate Alumni Association, Inc., P.O. Box 52192, Fort Benning, GA 31995-2192. Association membership dues are \$10.00 per year.



PROFESSIONAL FORUM



Air Assault into Iraq

LIEUTENANT COLONEL FRANK R. HANCOCK

At 0725 hours on 24 February 1991, the 1st Brigade of the 101st Airborne Division launched a massive helicopter assault as it struck 90 miles inside Iraq with more than 2,000 soldiers. The brigade's mission was to establish a forward operating base (FOB Cobra), which would support the division's attack on the following day to sever Highway 8 in the Euphrates River Valley.

The air assault consisted of four infantry battalions (the 1st, 2d, and 3d Battalions, 327th Infantry, and the 1st Battalion, 502d Infantry); one field artillery battalion; two attack helicopter battalions; a cavalry squadron; and several lift battalions. Upon landing, the lead infantry battalion, the 1st Battalion, 327th Infantry, was surprised to find an Iraqi infantry battalion (340 soldiers) entrenched in a battle position within its sector of the FOB.

Over the next three hours, the battalion employed attack helicopters, artillery, close air support (F-16s and A-10s) and infantry weapon systems to force the Iraqi battalion to surrender.

In executing our portion of the division's assault into FOB Cobra, we had our fair share of luck. We also came away with some lessons we had learned, or relearned, about air assault. Our experience may be helpful to future battalion commanders, S-3s, and company

commanders who will plan and execute the air assaults of the future.

Analyze your intelligence reports. In preparing for the air assault into Iraq, the battalion received a blizzard of different intelligence products. Intelligence summaries from the 101st and the XVIII Airborne Corps, aerial photography, and video tapes of our landing zones (taken by Apache helicopters) were all available to us. Because of the volume of information, it was a challenge to sift through all the reports to ensure that the critical intelligence for the air assault was incorporated into our planning.

For example, in studying one of the summaries, the battalion S-2 plotted an "unoccupied" trench line adjacent to our lead company's landing zone. Since we knew there was an Iraqi logistics site (15 to 30 men) three kilometers north of this trench line, the S-2 recommended that we move the landing zone (LZ). Because of his analysis, we moved the LZ two kilometers farther south to keep from landing 500 meters from the dug-in Iraqi battalion. At battalion level, the staff and the commander must analyze their intelligence reports. No one is in a better position to understand the relevance of a particular piece of intelligence.

Don't underestimate the capabilities of the enemy. When a battalion is

preparing for an air assault, its leaders need to think carefully about the enemy's capabilities. In this air assault, we had to consider whether chemical weapons would be used, the possibility of counterattacks by enemy armor, and whether enemy artillery could reach our LZs.

In these particular cases, our analysis was correct: The Iraqis did not have the delivery systems in our sector to release chemical weapons; their armor was destroyed by the combination of air power and the 6th French Division to our west; and their artillery was not within range of our LZs. On the negative side, however, we were surprised by their air defense capability (four S-60 guns surrounded the Iraqi positions); they did have much more firepower than expected (10 mortars, more than 300 rocket propelled grenade rounds, and several types of larger antitank weapons); and they had very good night vision capabilities. Because of the vulnerability of air assaults, planners must not underestimate the capabilities of future foes who will probably have weapons comparable to our own in effectiveness and lethality.

Artillery—Don't leave home without it. When an infantry unit exits its helicopters, it needs artillery *in range* to support it. While attack helicopters and close air support can supplement



artillery fire, the all-weather, reliable, and time-independent artillery becomes the infantryman's weapon of choice.

In planning an air assault, the infantry commander should ensure that artillery will be available to him when he lands. Although attack helicopters and close air strikes were used against the Iraqi battalion, artillery was the *prime* weapon in forcing their surrender.

If you can't talk, you can't command. When the battalion landed in Iraq, it was necessary for me to talk to 11 different stations—Company A, Company B, Company C, Company D, scout platoon, mortar platoon, brigade tactical command post (TAC), the battalion alternate TAC, attack helicopter battalion, artillery battery, and close air support aircraft. These stations were spread out over 15 kilometers and moving, some of them under fire. To synchronize these elements, prevent fratricide, and at the same time strike at the enemy, we had to have good communications.

Some of the steps we took to provide reliable and redundant communications were:

- Place the S-3 and an alternate TAC with the lead company.
- Place the battalion TAC in the center company so it could talk to the lead and rear companies.
- Bring the Air Force liaison officer's vehicle and the battalion commander's vehicle into the LZ (by CH-47) for the increased range and power of their radios.

- Ensure that the attack helicopter battalions knew the frequencies and call signs of the committed force.

These steps helped give us good communications throughout the air assault. The battalion commander is the *maestro* for his part of the battle: He has to orchestrate the attack helicopters, the CAS, the artillery, and the infantry units, and if he can't talk to these elements, he can't effectively use them.

If the objective has enemy on it, land somewhere else. The argument about whether or not to land on an objective goes back to World War II air-borne doctrine. Some people believe you can land on a small defending force and overcome it with sheer violence and mass. Considering, however, the lethality of automatic weapons, hand-held surface-to-air missiles and the vulnerability of helicopters, I believe it is much wiser to land off an objective that is occupied by even a small force. Although attack helicopters, CAS, and artillery can suppress an enemy position, you can never be sure that all opposition has been eliminated until you actually reach the objective. Landing off the objective allows you to get organized and synchronize your firepower before attacking. Landing on an occupied objective may prematurely put soldiers in jeopardy.

Rehearse, rehearse, rehearse. In preparing for our air assault, we had plenty of time to rehearse the mission, and we did this from squad to division level. In the battalion, we had three full-

blown rehearsals (everyone in the battalion), and in the last one had the key leaders (battalion and company commanders) assessed as casualties. Rehearsals will verify plans, work out the bugs, and synchronize the attack.

Train your subordinates, and then trust them to do the right thing. Finally, and most important, an air assault can be depicted as a centralized concept executed in a decentralized manner. Our battalion's portion of the air assault had more than 600 soldiers and 10 vehicles, lifted in by 22 Black Hawk and seven Chinook helicopters in two separate lifts. The air assault covered more than 90 miles, lasted more than two hours, and spread the battalion over 15 kilometers.

To pull off this type of attack, leaders must train their subordinates to think for themselves and make decisions on their own. Commanders who retain too much control, or who fail to train their subordinates to think and act on their own, will have a tough time executing an air assault of this magnitude.

The successful execution of this air assault was a result of a careful intelligence assessment, a detailed understanding of the enemy's capabilities, responsive artillery support, well-planned command and control, and thoroughly trained subordinates. While airmobile operations may have unique characteristics, the principles that contributed to the success of this mission were the same ones that commanders have relied upon in past wars. Leaders who apply them in future conflicts will be able to move quickly, accomplish the mission, and redeploy with minimal losses among the soldiers and equipment entrusted to their care.

Lieutenant Colonel Frank R. Hancock commanded the 1st Battalion, 327th Infantry, during its air assault into Iraq. He is a graduate of the British Army Staff College and the Army War College and is presently assigned to the Strategy and Policy Branch of U.S. Pacific Command. He is a 1972 graduate of the United States Military Academy.

Bicycle Infantry

The Swiss Experience

CAPTAIN KEVIN D. STRINGER

For more than 100 years, bicycle-mounted infantrymen have contributed to the territorial defense of Switzerland. With new bicycles and improved weapons for the future, this special band of Infantry will continue to participate in the security of Switzerland in an era of defense budget reductions and military necessity.

Although this type of infantry may seem anachronistic, it has not been long since other countries have also used bicycle troops. During the Vietnam War, for example, North Vietnam Army and Viet Cong units frequently relied on bicycles for the swift movement of personnel and supplies—a method that lacked the thermal and noise signatures that often betrayed conventional motor convoys to the U.S. Air Force aircraft.

In these changing times, this type of infantry may also be relevant to the United States Army because of its low cost and its usefulness as a flexible force between light infantry and mechanized forces.

Switzerland's policy of armed neutrality, which dates from 1815, has been preserved through a defensive strategy that capitalizes on the country's distinctive geography and terrain. In the 20th century, the Swiss bicycle infantry has been a key component in the operational execution of this strategy.

Historically, bicycle troops have served in the Swiss Army since 1891 in a variety of roles, including courier, liaison, and command and control. Today, they are classified as part of the light and mechanized branch of troops. They

are trained as regular infantry but with specific differences in employment and physical training.

Switzerland now has three regiments of bicyclists divided among the Western, Central, and Eastern Field Army Corps. Each regiment is part of the corps troops and therefore directly controlled by the appropriate corps commander as part of his tactical and operational reserve. The bicycle units are almost always employed pure—that

In a global force such as the U.S. Army, a modified bicycle infantry unit might be used in rear area combat operations, occupation or pacification duties, and peacekeeping or peacemaking operations.

is, not task organized with armor or mechanized infantry units—and can be allocated to a division as needed.

Structurally, each regiment consists of three battalions plus four specialized companies under a regimental headquarters commanded by a colonel. Despite its name, a bicycle infantry regiment still has a number of vehicles, and only about half of the total regimental force is mounted on bicycles (about 2,800 men and 1,300 bicycles) with the rest being transported on other vehicles.

The current regimental structure consists of a staff and headquarters company, one 120mm mortar company, one vehicle-mounted TOW antitank compa-

ny, one medical company, and three bicycle infantry battalions. Each battalion has one staff company, three bicycle infantry companies, one 81mm mortar company, and an antitank company armed with Dragons. The mortar and Dragon companies are motorized. The bicycle infantry company, the basic fighting element of the battalion, has a headquarters platoon, three bicycle infantry platoons, and a machinegun platoon for a total of approximately 145 men.

During periods of increased national readiness, the bicycle infantry unit's tasks include security and protection of important areas and persons; protection of the Swiss border; and reinforcement of the civil authorities and police.

After an outbreak of hostilities, their wartime tasks are security of key areas; security of unoccupied areas in the corps sector, particularly those inaccessible to mechanized forces; engagement and blocking of air assault or airborne landings in the Corps rear; and general infantry missions.

The bicyclists are used in a combined arms role for all basic infantry functions of attack and defense. Their specialties are quick-strike (*Handstreich*) operations, urban warfare, and close terrain combat. (They do not perform specialized reconnaissance missions and are not used as cavalry, despite their affiliation with the light and mechanized troops of the Swiss Army.)

These three specialties highlight the advantages of the cyclists. First, in quick-strike operations, their speed, ter-

rain mobility, and silence are paramount. Bicycle infantry companies require no special preparation from an assembly area, in contrast to a mechanized or motorized unit, which must organize, prepare, and then road-march its vehicles to an objective. A bicycle unit can therefore mount an attack in a short time. It can also traverse areas that have poor road networks (forest trails, narrow lanes, country paths) with relative ease. In addition, a bicycle infantry company moves with no vehicle noise, thereby maintaining an element of surprise during the attack.

According to Swiss Army doctrine, the use of a bicycle company in the attack is most effective within the first 30 to 50 kilometers (18 to 31 miles). Within this distance, bicyclists are quicker, quieter, and more responsive than armor or foot and mechanized infantry while still maintaining their combat power. A bicycle unit can maintain an average speed of 12 to 15 miles per hour within this distance. It can also operate out to a range of 100 to 120 kilometers (60 to 72 miles), but at these longer distances the cyclists arrive at their objective with much of their combat power exhausted.

As essentially light infantrymen, cyclists do well in close terrain and urban areas because of the importance placed on these areas in training, as well as the excellent range advantage achieved with their weapon systems at distances of less than 400 meters. Urban combat receives special emphasis in the Swiss Army since more than 60 percent of the population live in urban areas and the control of these areas is vital to the preservation of the Swiss commercial, industrial, and political base. Armed with an assortment of light infantry weapons—SIG Stgw 7.5mm assault rifles, grenades, 83mm bazookas, mines, Dragons, 81mm mortars, and machineguns—the bicycle infantry battalion can make death traps out of villages, towns, and cities for any would-be invader.

Bicycle infantry is also used to screen forces to the flank or rear; to block axes of advance at urban nodes; or to be held in reserve to rapidly plug gaps in a defensive line. With the advent of a



Bicycle infantry corporal leads part of his section on a conditioning ride.

major Swiss military reorganization scheduled for 1995, the use of bicyclists will be expanded to include more security missions, law and civil order tasks, and possible peacekeeping duties.

Logistical support is generally not a problem for the bicycle units, because there is an extensive internal network of pre-positioned supply points throughout the country. Furthermore, a bicycle infantry unit has a relatively low maintenance requirement due to its low number of vehicles in comparison to a mechanized unit; and the cyclists will never operate with extended supply lines since, under current policy, they will be employed only within the country's borders.

Since Switzerland's military system is based on a universally conscripted militia force, every able-bodied male undergoes 17 weeks of intensive basic training at the *Rekrutenschule* (recruit school) at the age of 20 and then performs annual three-week refresher courses until the age of 32.

In recruit school, a bicycle infantryman learns all the basic infantry skills with special emphasis on physical conditioning with the bicycle. This physical training culminates in a 200-kilometer (120-mile) ride in 20 hours before completion of basic training. This is no small feat, considering the hilly and mountainous terrain, the soldier's load,

and the bicycle itself. The average load for the cyclist is 30 to 50 kilograms (67 to 113 pounds), depending on his job and the ammunition required. All equipment is carried on the bicycle, including bazookas, machineguns, tripods, rucksacks, and personal equipment.

Of even greater interest is the standard-issue bicycle. The Swiss Army has used the same model bike since 1905. This bicycle was modified once in 1911 to include a drum brake but otherwise remained unchanged. Fortunately for the soldiers, in 1993 the army introduced a seven-gear mountain bike with hydraulic brakes. Although this should alleviate some of the load problems, the main reason for the change was the lack of spare parts for the old 1905 model.

After completing his basic training, the average bicyclist can expect to perform at least eight annual three-week repetition courses with his assigned unit until the age of 32. After this period, he is placed in a secondary reserve echelon (*Landwehr*) with fewer training requirements. Since the entire Swiss military system is based on a militia concept, the bicycle infantryman must train on his own to stay in good cycling condition. For those who do not, there is always remedial physical training at each annual refresher course. Besides conditioning, the refresher courses also provide



Swiss bicycle company performs vehicle maintenance.

an opportunity to sharpen infantry skills and practice unit exercises.

In summary, bicycle infantry is an ideal operational tool for a defensive strategy that is focused on a small geographical area dominated by urban or wooded terrain. The advantages of bicycle infantry units are basically fourfold: They are more responsive than mechanized and foot infantry for short distance attacks or counterattacks; they can traverse areas where tracked or motorized vehicles have difficulties, while having a range and endurance advantage over foot infantry; they are relatively quiet; and they have a rather low logistical support requirement, although this advantage must be considered in the context of the network of prepositioned supply points, and in comparison to a heavier mechanized infantry unit.

The disadvantages of bicycle infantry units are quite obvious: In highly mobile and fluid operations, they cannot cover long distances without exhausting their combat power and cannot adjust rapidly along a large front. Additionally, they cannot keep up with fast-moving armored columns. Further, their light antitank capabilities require extensive support from armor, mechanized, and air assets in open terrain.

Although these disadvantages are not pertinent in the current Swiss military context, they must be considered if applied to a country with different ter-

rain and a more offensive military doctrine.

Three possible uses for a modified bicycle infantry unit in a larger, global force such as the United States Army would be in rear area combat operations, occupation or pacification duties, and peacekeeping or peacemaking operations.

In rear area combat operations, bicycle infantry would be responsive enough to react to air assault or airborne infiltrations in a specific sector with the necessary combat power to deal with the threat. This use would also allow the cyclists to take advantage of rear area logistic points to keep their supply lines short, while freeing heavier fighting assets for other duties. The material cost of a bicycle battalion, considering the smaller number of vehicles and lower fuel consumption rates, would be considerably less than that of a mechanized battalion.

Occupation or pacification duties would be a possible use of bicycle infantry, especially in some Third World areas, because of the poor transportation networks available and the more static nature of these operations in terms of short-distance movement.

Peacekeeping or peacemaking operations would be an ideal use for these troops because of their light infantry skills, terrain mobility, and flexibility.

As the Swiss Army switches to a more mobile defense in 1995, the bicy-

cle infantry regiments will be integrated into this new system and possibly oriented to an airmobile role to increase their mobility and range. The current regimental structure will definitely change to accommodate the nation's planned troop reductions.

This new structure will take away one entire battalion from the regiment, leaving only two bicycle battalions per regiment. The four regimental companies will be combined with an additional bicycle infantry company to form a staff battalion.

Regardless of what these changes may bring, however, this special type of infantry will continue to play an important role in the Swiss military structure well into the 21st Century. Its utility and low cost justify its consideration by the U.S. Army as well—not as a replacement for existing types of infantry units, but as an additional and more flexible option between foot and mechanized infantry forces.

Captain Kevin D. Stringer, U.S. Army Reserve, is special assistant to the U.S. Defense Attache in Bern. He previously served on active duty as a headquarters company executive officer and an aeroscout platoon leader in the 8th Infantry Division in Germany. He is a 1987 graduate of the United States Military Academy.

Continuous Operations

Improving Soldier Performance

JOE W. SIMMONS

Continuous land combat is an advanced warfare concept, made possible by modernization and technology that permit effective movement at night, in poor weather, and in other low-visibility conditions. Historically, armies have been forced to pause in battle because of darkness or the need to resupply and regroup; today, combat operations can be fast-paced, around-the-clock, and intense.

Now that armies have the potential to fight without let-up, continuous operations and night operations will become more common. As a result, units may suffer from decreases in their soldiers' performance in cognitive skills, beginning as early as 18 hours into a continuous operation.

Field Manual 22-9, *Soldier Performance in Continuous Operations*, defines continuous operations as "continuous land combat with some opportunity for sleep, although this sleep may be brief or fragmented." During any continuous operation, there may be periods of sustained combat in which there is *no* opportunity for sleep. A successful application of continuous operations to maneuver warfare therefore requires the development and application of a sleep management plan.

In April 1993, the Dismounted Battlespace Battle Lab, at Fort Benning, was directed to expand its "Own the Night" initiative to include the investigation of ways to improve soldier performance during continuous operations. The Battle Lab has enlisted the help of the U.S. Army Research Institute of Environ-

mental Medicine and the Walter Reed Army Institute of Research to investigate near-term solutions. This effort will include studies on melatonin, caffeine, and a wrist-worn vigilance monitor.

Melatonin Study. Melatonin—a naturally occurring substance released by the human pineal gland—appears to help induce and maintain sleep. The administration of melatonin before periods of sleep may prove to be an effective way to ensure that soldiers get as



much restorative sleep as possible while conducting continuous operations.

The private sector has conducted only limited research on melatonin because of difficulties associated with obtaining patent protection for natural substances. Recently, however, there has been great interest in the use of melatonin. Standard prescription drugs of this type have side effects that limit their use in the civilian sector. In military operations, these adverse effects—notably, next-day impairment in mental performance, learning, and memory—can lead to problems. In spite of these

limitations, such drugs have been used in past military operations, because no other effective sleep aids were available.

In addition to its sleep enhancing properties, melatonin speeds adaptation to sudden changes in work-rest cycles, called "shift-lag," which significantly impair mental performance and work capacity. The regular administration of melatonin just before the desired bedtime improves the ability to adapt to a new schedule.

Shift-lag can be a significant problem for infantry units and others that are suddenly required to adjust from daytime to nighttime operations. In a recent effort, the U.S. Army Aeromedical Research Laboratory and a Special Operations aviation unit conducted a study to determine whether melatonin speeds adjustment to a new work schedule. In this study, mental performance, specifically vigilance, was significantly impaired in crew members given a placebo while melatonin treatment prevented this impairment in other aircrew and ground crew members. Melatonin also significantly increased sleep.

Several studies will be conducted to determine whether treatment with melatonin prevents impaired performance in various operational scenarios, such as following a shift from daytime to nighttime duty. These studies will begin with the administration of melatonin several days before the change in schedule and continue daily during the adaptation period. On each day of the study, aspects of mental performance that are relevant to military operations will be

assessed, including vigilance, reaction time, and marksmanship. The quality and quantity of sleep will also be assessed.

Caffeine Study. Caffeine has significant beneficial effects on certain aspects of mental performance, especially the ability to maintain vigilance and react appropriately to the environment. Doses equal to single or multiple servings of beverages containing caffeine consistently improve visual and auditory vigilance. In addition, moderate doses of caffeine increase alertness and reduce fatigue, as reported by individuals in the tests. Caffeine also prevents many of the adverse effects of sleep deprivation on mental performance. Additionally, caffeine has been shown to sustain and improve mental performance for long periods in simulations of military activities such as sentry duty, marksmanship, and vehicle operation.

Although the effects of caffeine on behavior have been characterized in a number of laboratory studies, no assessment has been made of its effects on soldiers engaged in actual military operations. Furthermore, the most favorable dosage and timing of caffeine administration during sustained operations have not been determined. During Operation DESERT STORM, many soldiers who were engaged in critical duties—such as air defense—consumed massive doses of caffeine in an effort to sustain vigilance and alertness. The effectiveness of such self-medication has not been established, however, and its possible adverse effects on sleep have not been considered. Appropriate recommendations must be formulated for the use of caffeine in sustained operations scenarios.

The administration of caffeine, in the proper doses and at the proper time, may be an effective treatment to ensure that soldiers maintain maximum levels of vigilance and alertness when engaged in sustained operations, suffering from jet-lag, or adapting to a changing duty schedule.

The Battle Lab effort will assist Walter Reed Army Institute of Research in conducting two studies, each using a continuous operations scenario. The first

study will seek to determine the optimal dose of caffeine for improving vigilance, performance, and alertness. The second study will assess the optimal timing of caffeine administration.

In both studies, military performance and performance on standardized tests of vigilance, reaction time, and attention will be evaluated, and the subjects' mood and sleep will be measured. In addition to determining the most beneficial effects of caffeine on mental performance, it will be essential to determine whether caffeine has adverse effects on sleep or mood.

Wrist-worn Vigilance Monitor. Few countermeasures are available to pre-



vent decreases in performance attributable to fatigue, disrupted sleep-rest cycles, or sustained military operations in harsh environments. Even highly motivated, well-trained soldiers cannot sustain the necessary levels of alertness when they are on duty for extended periods. For example, the air defense personnel operating missile batteries during Operation DESERT STORM reported great difficulty maintaining the required level of readiness because of fatigue. Exposure to adverse environmental conditions—heat, cold, high altitude—can decrease vigilance, especially at night and during sustained operations.

The Army Research Institute of Environmental Medicine has developed a prototype monitoring device that can assess a soldier's vigilance and, when necessary, provide appropriate stimulation to prevent decreases in attention.

The small, self-contained device resembles commercially available wrist-worn activity monitors. It warns the individual or others of a lapse in alertness and thereby restores vigilance.

Currently, no such devices are available that can continuously monitor and record a soldier's vigilance and alertness while he freely moves around in his environment and participates in normal daily activities. Such a device would provide reliable information on the patterns of soldier performance in operational settings. Ideally, it would also record information on the actual environmental conditions of temperature, ambient illumination, and sound levels.

The Dismounted Battlespace Battle Lab has requested support to develop the monitor for field conditions and to conduct a field study to determine whether it can prevent decrements in performance during sustained and continuous operations, including transitions from day to night operations. In addition to preventing any degradation in vigilance, the device would synchronize the wake and rest cycles of soldiers to the changes in the duty day by permitting sleep only at specific times and ensuring alertness at other times. It could therefore help in the treatment of jet-lag, shift work, and related problems in soldiers engaged in intense training or operational activities.

The fact that soldiers get tired is nothing new, nor is the knowledge that stimulants keep them awake. What is new, however, is the level of research currently under way to determine the most effective—and safest—way to enable our soldiers to operate effectively for extended periods of time under all conditions. The information gained from this Battle Lab initiative will enable our Army to gain and maintain the decisive edge on the multidimensional battlefield of tomorrow.

Joe W. Simmons is Deputy Chief, Battle Command Division, Dismounted Battlespace Battle Lab at Fort Benning.

Munition Effectiveness Manuals

MICHAEL R. JACOBSON

Joint munition effectiveness manuals (JMEMs) are important and useful publications that contain information on the effectiveness of U.S. and threat munitions against a variety of targets. Unfortunately, too few Infantry officers seem to know about these publications.

The primary objective of the JMEMs has been to provide the most accurate weapons effectiveness data possible and to present it in a usable format. The manuals consider the targets' vulnerabilities and the weapons' characteristics and delivery accuracy. Most JMEMs show damage capabilities in three categories—*firepower kill*, which means damage to eliminate the target's ability to fire its weapon systems; *mobility kill*, which means damage to a vehicle's engine or tracks or wheels that will prevent it from moving; and *catastrophic kill*, which means repair of the vehicle is not feasible.

The following are examples of these manuals:

Field Manual (FM) 101-60-1, *Effectiveness Data for Mortar, 81mm* (U), provides effectiveness data against selected targets in various environments.

FM 101-60-16, *Effectiveness Data for Infantry Direct Fire Weapons* (U), provides effectiveness data for the LAW, Dragon, TOW, improved TOW, and 90mm recoilless rifle against tanks and light armored vehicles.

FM 101-60-32, *Effectiveness Data for the M2A1/M3A1 Bradley Fighting Vehicle* (U).

61 JTCG/ME-77-15, *Red-on-Blue Manual Effectiveness Estimates for*

Soviet/Warsaw Pact Non-nuclear Munitions (U), assesses the survivability of U.S. targets under attack by these weapons.

61 JTCG/ME-83-8, *Special Operations Target Vulnerability and Weaponing Manual* (U), provides data for use by special operations forces in planning attacks against selected targets.

(Information on how to obtain JMEMs is available from JTCG/ME Publication Manager (TISUD), Oklahoma City ALC, Tinker AFB, OK 73145-5979, or DSN 336-2707.)

With units using fewer live fire exercises and more simulations, it is especially important for combat leaders and planners to know what their weapons can do, which munition is most effective against a given target, and how many rounds will be required to defeat it. For example, at 2,500 meters, is it better for a Bradley fighting vehicle to fire a TOW missile or 25mm rounds at a light armored vehicle? How many 25mm armor piercing discarding sabot or high-explosive incendiary rounds will it take to defeat the target?

Bradley crewmen and leaders who do not know about these manuals may have unrealistic expectations concerning engagement results with the 25mm cannon. Currently, for gunnery training, a Bradley crew gets a "GO" for putting three rounds out of five on a target. This standard appears to be related to the cost of the ammunition and not to the true number of rounds required to defeat a BMP, but many gunners and leaders may believe that the training standard is also the combat standard. Likewise, the

Bradley unit conduct of fire trainer (UCOFT) and the simulations network (SIMNET) use several rounds to defeat their BMP-type targets. But anecdotal experiences from Bradley crews in Operation DESERT STORM report firing 20 to 30 rounds per target to achieve a catastrophic kill on lightly armored vehicles at some ranges, and these numbers are much closer to those reflected in FM 101-60-32.

BFV commanders and gunners should know that more than three out of five 25mm rounds are required to kill a BMP. (In the Israeli Army, gunners keep firing until they observe the desired target effect.) Battalion master gunners or S-3s should have copies of the classified **FM 101-60-32, *Effectiveness Data for M2A1/M3A1 Bradley Fighting Vehicle*** (U), dated 2 May 1989. This manual discusses the number of rounds to plan for when engaging several different lightly armored vehicles at various ranges and engagement angles. The greater the range to a target vehicle, the more rounds are required to defeat it. In one case, an increase of 400 meters in range could almost double the number of rounds that would have to be fired to defeat the target.

An antiarmor gunner is lucky to be able to fire a single antiarmor service round during his entire enlistment. Obviously, the correct way to employ the LAW or AT4 light antiarmor weapons is to engage lightly armored vehicles in the flanks or rear at close range with volley fire. Engaging targets simultaneously with multiple LAWs or

AT4s requires planning, and engagement must continue until the desired target effect is attained; that is, until the target vehicle begins to burn or the crew abandons it.

Similar techniques are required when engaging tanks with Dragon or TOW missiles. Instead of volley fire, however, successive fire is required in which a second and possibly a third gunner is ready to engage the same target if the previous missile fails to destroy it.

During the early days of the Korean War, the gunners in Task Force Smith made direct hits with their antiarmor weapons, and still the Russian-made T-34 tanks rolled on. One lieutenant fired 22 rounds into the rear of a tank without stopping it. The Americans destroyed only four tanks and slightly damaged three others. The tanks continued through the position and overran the artillery battery. About 150 men of the task force were killed, wounded, or

reported missing in action, and their howitzers and most of the crew-served weapons were abandoned. The success of the enemy in this battle affected the course of the entire war.

Leaders must recognize and guard against the negative training lessons that some training devices and gunnery standards may instill in their soldiers. For example, SIMNET (a command and control trainer) uses an unrealistic "card-board" target that burns when hit. And the reason Bradley fighting vehicle gunnery standards require gunners to hit a target with three out of five rounds is not because a BMP can actually be killed with three rounds. The expectation is that soldiers who can hit a target with three rounds out of five can continue to hit the target until it has been destroyed. Similarly, LAW and AT4 gunnery has soldiers individually firing one round instead of squads practicing volley fire. The prevailing attitude during this gun-

nery is that one shot equals one hit, which equals one kill. While this may be suitable for gunnery training, it does not match the reality of the battlefield, where at least two rounds are often required for a light armor kill.

Obviously, there are differences between targets for gunnery and actual enemy armored vehicles, and leaders must keep this in mind. Obtaining and using the appropriate JMEMs is the best way to make sure that our soldiers' training accurately prepares them for the real battlefields of the future.

Michael R. Jacobson is an intelligence research specialist in the Directorate of Threat and Security, U.S. Army Infantry Center at Fort Benning. He is a lieutenant colonel in the U.S. Army Reserve assigned to the 87th USAR Division (Exercise). During 12 years of active duty, he held various armor and military intelligence positions.

The Battalion HHC Commander

COLONEL COLE C. KINGSEED

Few officers play as big a role in the combat readiness of an infantry battalion as the headquarters and headquarters company (HHC) commander. Unfortunately, many HHC commanders never reach their true potential because they, like their battalion commanders, have not taken the time and effort to analyze the qualities that lead to the success of a commander at the HHC level.

On the basis of more than five years' experience as leader of an infantry platoon and commander of a company and a light infantry battalion, I would like to offer some personal insights into what I believe makes an effective HHC commander. Although these comments are based mainly on my light infantry experience,

I think they could be applied in any unit across the broad spectrum of infantry-related activities.

First, the HHC commander is frequently the senior company commander in the battalion and brings to the unit a breadth of experience and wisdom that marks him as one of the battalion's most valuable company-grade officers. Moreover, the HHC is the largest and, by its nature, the most diverse and complex company; this is true at both brigade and battalion levels. Senior commanders therefore often dictate that successful command of a line company be a prerequisite for HHC command.

One of my colleagues once commented that many officers perceive HHC

command as an exercise in stewardship instead of leadership. The distinction is important. As a steward, the commander would serve chiefly as an instrument of the staff sections and an administrator of discipline. Remaining behind a desk and focusing on administration, he would seem content to allow the appropriate staff officers to train the platoons that they must employ in field situations. Finally, the steward's approach to command is often more reactive than active.

Diametrically opposed to stewardship and the managerial approach to command is that of a proactive commander, who is not only more effective but also a major contributor to the battalion's

combat effectiveness. Only two officers in the HHC wear the coveted green tabs of an infantry commander—the battalion commander and the HHC commander. Accompanying those tabs are the inherent responsibility to lead and the willingness to make critical decisions that affect the unit's soldiers. That responsibility cannot be executed from behind a desk.

In a sense then, command of HHC is much the same as any other company command, except that the challenges are greater. To demonstrate, let us examine a few areas:

Command-staff relationships. A good working relationship with the other commanders and the battalion staff is essential for success. The core of this relationship must be mutual respect and total dedication to the accomplishment of the mission essential tasks as articulated in the Army training and evaluation program (ARTEP) and the battalion commander's guidance. There is absolutely no room for destructive competition between the HHC commander and the line company commanders, or between the HHC platoon officers and their staff affiliates. The HHC commander bears a singular responsibility to ensure that his command style does not detract from the battalion's overall mission effectiveness.

A new commander's effectiveness in cultivating a good relationship with the staff often determines his effectiveness as a leader. Accordingly, a prudent HHC commander will quickly establish a close personal relationship with the battalion executive officer (XO) and the command sergeant major (CSM). Support from the XO is important, because he can ensure that the staff sections release their personnel for mandatory training events. In addition the XO is indispensable to the HHC commander's efforts to improve unit maintenance. The CSM is essential because he can often deal more effectively with the staff noncommissioned officers (NCOs) than either the HHC commander or the first sergeant. (An HHC commander must not rely too much on the XO or CSM but should use them only as a last resort or when attempts to coordinate directly

with the staff officers and senior NCOs have proved fruitless.)

The best HHC commanders I have observed have gone to great lengths to gain the trust and support of the staff officers and section NCOs through personal visits to their offices. By coordinating training and administrative requirements directly with each staff's senior leaders, the commander ensures that unit status report (USR) statistics are maintained at an acceptable level. In 22 years of infantry service, I have never seen an effective HHC commander who ran the company with only minimal contact with the staff.

The HHC commander should also develop a positive relationship with the rifle company commanders. This allows him to use their ranges and training activities to add flexibility to the HHC training schedule, especially for soldiers serving in the staff sections. The temporary inconvenience to line units of the HHC's "piggy-backing" on their training is more than offset by the good support they get in return. Naturally, this relationship should be reciprocal.

Training. How does an HHC commander maintain his unit's readiness? It begins with a command philosophy that is built on a foundation of solid training. One former HHC commander described it this way: "If the bayonet—the symbol of the infantry—represents an infantry battalion, then the companies are the blade, and HHC is the hilt and steel behind the blade." No matter how sharp the blade is, the true quality of the weapon is in the steel. Regardless of how well-trained the line companies are, their sharpness dulls after the initial engagement if HHC does not serve as the tempered steel that supports them. Consequently, the HHC commander must train his unit to the same standards as the line companies with respect to live fires, field marches, and mission essential task training.

Before assuming command, an incoming HHC commander should familiarize himself with the weapons organic to the company, reading the appropriate manuals and seeing that subordinate leaders do the same. He

must not delegate the supervision of the training meeting to his XO or the training NCO. He should direct that the platoon leaders submit their training plans to him for approval. The HHC commander, not the staff officers or the battalion XO, is the principal trainer of the company. Of course, the XO will train the staff in staff functions, but the commander can assist him by coordinating routine tactical operations center (TOC) and communications exercises to ensure efficient staff procedures.

The HHC commander should avoid over-managing his platoon leaders. Just as he is often the senior company commander in the battalion, his platoon leaders also have often been hand-picked by the battalion commander and merit a greater degree of latitude than their line company counterparts. They are quite resourceful in planning and conducting challenging training to support the company's mission essential tasks.

Does this mean the commander must be technically competent in all the company's diverse specialties? Obviously not. Few commanders are expert medics or knowledgeable in all the communication skills. But the HHC commander must participate in training so he can actively assess unit performance, resource training requirements, and generally evaluate the way training is conducted. The familiar adage that the only things that are accomplished are those the commander checks is just as true in an HHC company as in a line company.

There is additional benefit associated with participating in platoon training. First, it provides the commander with the diverse technical expertise that can be used in future leadership situations. Additionally, soldiers respect a leader who listens to instruction, solicits their ideas on training, and demonstrates tasks to standard. Frequent participation also allows the commander to evaluate the trainers in his command and leads to a greater appreciation for the competence of these NCOs in their garrison and tactical training.

The commander might also use the specialty platoons to make the most of cross-training opportunities. Scouts

should regularly attend mortar live fires to obtain practical experience in calling for and adjusting indirect fires. He should conduct live fire exercises that focus on the synchronization of platoon fires and coordinate with other company commanders for the integration of his organic platoons in unit combined arms live fire exercises.

The commander should plan for an occasional collective training event that involves the entire company, using innovative ways to get staff soldiers away from the office. A training highlight that my battalion's HHC commander developed involved a convoy live fire exercise during which staff soldiers were organized into squads. After being ambushed along the route, the squads dismounted and negotiated a maneuver live fire lane. The soldiers loved it and gained a greater appreciation of what their line counterparts encountered on a routine basis. As an additional benefit, these varied training activities improved unit cohesion.

One last word about training. Often the only time an HHC commander sees his entire company on a daily basis is at morning physical training formation, and he should use this opportunity. He might conduct at least one company run a week and devote the rest of the week to ability runs, endurance activities, and other physical training. Regardless of what he decides, he should make sure everybody understands and meets his standards. He might use his medical platoon sergeant or platoon leader to supervise all special category soldiers in a specifically designed program that manages soldiers who are overweight, on profiles, or physically substandard. He might also conduct centralized Army Physical Fitness Tests and unit weigh-ins to ensure quality control. The first sergeant will be invaluable in developing a viable physical conditioning program.

Operations. A tactical environment presents some complex challenges for any officer about to assume command of an HHC. Where does he belong in the field? Is it in the trains, the TOC, or with his platoons? What are his personal

responsibilities in a tactical environment?

First and foremost, he (and his first sergeant) should avoid becoming "waterboys" or "ration-runners." The supply sergeant or another headquarters NCO can be used for these tasks. Nor should he allow himself to be a regular TOC shift officer, because that is not a commander's job, and there is no way he can properly command a company in the field if he is tied to a fixed location. What, then, are some alternatives?

As the officer principally entrusted with company training in garrison, he is negligent if he relegates that authority to staff officers when the company deploys to the field. The battalion commander, XO, and S-3 will determine the mission of the HHC platoons in the field, but the HHC commander can provide recommendations on the basis of his intimate knowledge of each platoon's capabilities. Who better than the company commander knows the strengths and weaknesses of his subordinate units? Certainly not some staff officer who sees the platoons only when he deploys from garrison.

The HHC commander should consider two of his critical roles in the field—that of a special team commander and of a high-salaried "sales representative." Because of the complexity of infantry operations, many battalion commanders form special teams to conduct specific operations, such as counter-reconnaissance, convoy operations, mass casualty or non-combatant evacuation, and other tactical missions. The magnitude of the operation may dictate that a more senior officer, such as the HHC commander, command this team. Since most HHC commanders are on their second command tour, they have a level of experience that far exceeds that of even the most proficient platoon leader.

Additionally, the independent nature of many infantry operations may lead the battalion commander to form a fourth "line company" to give the battalion more control and operational flexibility. As a junior officer who commanded a combat support company, for example, I was once directed to com-

mand the detachment left in contact while the battalion withdrew to more defensible terrain.

In his role as a "sales representative," the commander can assist his subordinate leaders in their attempts to recommend specific plans and missions to the battalion commander or the S-3. The platoon leader can be allowed to make the initial sales pitch on how he could best support the upcoming operation, but the HHC commander can play an important role in the formulation of a platoon leader's concept and development of alternative courses of action. Moreover, in the absence of the platoon leader, the HHC commander can present a persuasive case for the employment of his individual platoons.

Clearly, the senior company commander in the battalion cannot play an effective role if he simply surrenders control of his units to the battalion staff and abrogates his command responsibility as soon as he leaves garrison. Specific circumstances may dictate that he offer his services for TOC duty periodically, but a prudent HHC commander should resist formal taskings of this nature.

Maintenance. Maintaining the company's equipment is everyone's business, but HHC owns most, if not all, of the battalion's vehicles and special weapons. The challenges that confront the HHC commander in this area are staggering, if for no other reason than that few battalion commanders spend much time in the motor pool. As a former XO at company, battalion, and brigade level, I can attest to the infrequency of command visits to unit motor pools. The primary method of insuring materiel readiness is the development of *command* maintenance programs founded on weekly motor stables, aggressive services programs, and a comprehensive recovery plan. The commander, not the company XO or platoon leaders, is responsible. Certainly, the XO will serve as point man, but if the commander does not participate in motor stables and conduct at least part of the recovery inspection, his subordinate leaders may relegate their maintenance responsibilities to their own subordinates.

The HHC commander might also consider asking the battalion XO, or quite possibly the battalion commander, to conduct the command inspection once a year. This, too, will demonstrate to the soldiers that maintenance is a command responsibility. The battalion XO might be asked to select the best platoon's vehicles or address the mechanics—frequently the battalion's unsung heroes. If the HHC commander does not do this himself, he might ask the battalion commander to present the mechanic and driver awards to deserving soldiers.

This command involvement in unit maintenance in no way detracts from the responsibility of subordinate leaders to maintain their own equipment. The commander should demand that platoon leaders spend motor stables in the motor pool and brief him on their respective maintenance programs. He must also coordinate with the staff sections to ensure that their equipment is always combat ready. The battalion XO will be the HHC commander's most important ally in any maintenance related activity.

In addition, the HHC commander should not underestimate the time required to return the company to a high

state of readiness following an extended field problem. This task is complicated by the normal support functions that must continue while recovery procedures are in effect. Three full days should be allowed for a complete recovery, including layout inspections of operator's vehicle material, basic issue items, personal clothing and equipment, and weapons.

The challenges of commanding an HHC are numerous and varied. My best advice to an incoming commander would be "Don't take your soldiers for granted." They should be respected for the complexity of the roles and missions they must accomplish if the battalion is to succeed. Commanding a headquarters company may not sound as exciting as leading a rifle or airborne company on a night attack to seize an enemy objective, but the potential rewards are greater.

Without the HHC, the battalion simply ceases to function as an effective unit. The commander should therefore strive to build unit cohesion. Although individual platoons usually have a degree of cohesion, allegiance to the company is frequently lacking. A

mandatory company party once a year or a unit dinner with spouses and friends can help build cohesion.

When it comes to awards and badges, the commander should attach as much significance to a soldier who earns the Expert Field Medical Badge or a mechanic badge as to a soldier who earns the Expert Infantryman's Badge. The badges authorized for drivers with excellent safety records should be awarded on the spot, and a personnel activities center clerk who does an exceptional job should be recognized as often as a fire team leader.

In the final analysis, command of an HHC is not a reward for successful command of a line company. It is a recognition of an officer's potential to command the most diverse and complex company in the battalion.

Colonel Cole C. Kingseed commanded the 4th Battalion, 87th Infantry, 25th Infantry Division, and is now assigned to the Department of History at the United States Military Academy. He is a 1971 ROTC graduate of the University of Dayton and holds a doctorate from Ohio State University.

The New Executive Officer

Management by Objective

LIEUTENANT PATRICK M. WALSH

An infantry lieutenant normally begins his Army career as a platoon leader. During this time, he learns and develops his own leadership style and managerial techniques. After about a year, he changes jobs and leads a specialty platoon, such as mortars, or becomes the company executive officer (XO).

Until recently, the XO was usually chosen from the senior lieutenants in the company, but due to the drawdown in today's Army and the overstrength of the officer corps, this has become a luxury. Now an XO, even a first lieutenant, may not be senior to all the platoon leaders working with him. As with any new job or promotion, the period of adjust-

ment can be difficult. Today's XO must overcome such adversities and learn his new job, often with little or no transition time.

To succeed, a lieutenant undertaking the job of XO must skillfully use and integrate management by objectives (MBOs). This process is not new to the Army. Initially, performance evalua-

tions and counseling procedures depict aspects of MBO. The Officer Evaluation Report, DA Form 67-8, requires supporting documents; officers must submit OER support forms stating their performance objectives. These objectives require that each job be directed toward the objective of the entire organization. The OER support form can be the basis for integrating performance appraisals, goal planning, and managerial leadership.

The identification of the XO's objectives depends upon the goals of his superior, the goals for the various sections, and the goals for the individual soldiers. The objectives need to be prioritized to correspond with those of the organization and its leader. The company commander needs to decide and clearly state what he expects of his subordinates, and the XO needs to know the results for which he will be held accountable.

The XO's objectives should spell out his contribution to the attainment of company and battalion objectives, his duties and responsibilities, and his personal goals. His objectives should be clearly spelled out, and they should mutually support unit objectives. To obtain balanced efforts, he should see that the objectives on all levels are geared to both short-range and long-range considerations. The comments on the XO's OER support form should reflect his commander's priorities. Individual or mutually supported objectives expressed by both the company and the battalion commanders should be restated in the XO's support form.

The Army provides definable duties and responsibilities that serve as a basis for all XOs. These were most recently defined by the Army in Military Qualification Standards II Infantry Branch (STP 7-1111-MQS, A-3):

- Coordinate logistics, maintenance, medical, and food service support.
- Keep abreast of the tactical situation.
- Assume command in the absence of the commander.
- Supervise the operation, movement, security, internal arrangement, and organization of the company trains.

- Work closely with the first sergeant, supply sergeant, communication chief, and aidmen.

- Coordinate directly with the battalion executive officer, S-4, support platoon leader, and battalion motor officer.

Aside from these duties, there are usually other responsibilities that need to be turned into definable objectives. A list of these responsibilities might include: unit fund manager, training officer, maintenance officer, physical security officer, unit logistician, rations control officer, maneuver damage officer, communications officer, and nuclear biological chemical officer. Anything else that the commander delegates or requires from the XO also becomes a part of these overall responsibilities.

The last source of objectives for the XO's support form could focus on personal goals, past performance, and



expectations of subordinates. Every officer needs to include a section on professional development that covers Army Physical Fitness Test goals, marksmanship, and educational development. His experience as a platoon leader is a good source for the XO to use in developing clear and concise objectives for the company or, more specifically, his headquarters section.

The headquarters section is a diverse group of soldiers from various ranks and branches, and with differing expectations. In establishing objectives, the section must have goals that both the XO and the commodity area chiefs will support. It is an indication of success when individuals want to work toward objectives they have had a part in setting.

If he follows these procedures, the XO should have no difficulty in deter-

mining his specific duties and responsibilities. The difficulties arise in the way the XO translates his stated duties into a working OER support form that can be used by the battalion, company, and individuals in achieving pre-set goals.

A newly appointed XO's transition usually takes place during the most hectic and chaotic time period. The Army often makes changes without shifting into a lower gear, and the new XO must jump onto the company as if it were a speeding locomotive. Too often, he never regains his balance but constantly reacts to short-range crises. If, by chance, he lands firmly, he seldom has the luxury of seeing what is already established but tries to make it fit his own ideas and system. Careful planning can ease the transition and improve efficiency.

The first step in making MBO work for the new XO is making the OER support form a workable document, and this can be accomplished by tapping all available resources. As soon as the possible job change is announced, he should obtain copies of the battalion and company commanders' OER support forms. With these documents in hand, he should highlight the objectives common to both and compare them with those on the previous platoon leader's OER support forms.

The new XO should establish a calendar of appointments with the company commander, the outgoing XO, and the first sergeant as early as possible. The first of these meetings needs to be with the company commander. This interview needs to bring out questions about the commander's OER support form, his specific duties for the XO, the company's tactical standing operating procedures (SOPs), and immediate short-range missions. If the outgoing and incoming XOs plan and share the work before the job change, the transition will be less traumatic for everyone. The best advice for a lieutenant making this change is to try to gain as much knowledge as possible before he steps into the job.

The meetings with the outgoing XO should be informal and as frequent as

possible. The new XO should try to get as much information as possible from him while he is still available and ask him for a copy of his OER support form. He should receive—as a minimum—the following information:

- Current daily status of all personnel and equipment.
- Current requested logistical support.
- Current training schedules.
- List of routine meetings and suspense dates.

In addition, the outgoing XO should leave the necessary field manuals, documents, and supplies to continue the established daily routines.

The new XO's courtesy meeting with the first sergeant could prove to be the most beneficial and informative of all. The first sergeant needs to work closely with the XO, even though he is not formally in the XO's chain of command. The XO is the only officer who is directly involved with "beans and bullets," because support functions are normally associated with the first sergeant and the platoon sergeants. The first sergeant and the XO need to develop a working relationship in which there are clearly defined areas of responsibility. During these meetings, the XO should use the first sergeant to gain insight on the individuals who make up the company. The XO should respect the first sergeant's decisions but should not let him assume areas of responsibility that are traditionally and necessarily the XO's.

The first sergeant should give the XO enough insight into the various commodity areas to ensure that he understands the daily working routine. With this information, the new XO needs to establish headquarters section objectives as well as individual commodity objectives for each of the following areas: drivers, supply sergeant, communication sergeant, training sergeant, and armorer. The XO is responsible for the informal staff of the company and needs the expertise of all the commodity area chiefs to assist him in his job. The success of these individuals, in turn, determines his own success.

The XO's success can also be attributed to his relationship with the other

company XOs and the battalion support platoon leader. Once a lieutenant is appointed to the position of XO, he should seek advice from these other XOs. They are undergoing a similar training cycle, yet they are experienced veterans in the job and can get a different perspective from outside their own companies. They can talk about their successes and failures. Each can think back to the XOs he observed while serving as a platoon leader, emulating the programs that were successful and avoiding the noticeable mistakes of others. The other XOs, along with the support platoon leader, control all of the battalion's training resources. The XO should therefore develop into a team player, share ideas, and improve the battalion, which will then improve the individual companies.

The least formal, yet most influential, tie is between the company XO and the battalion XO. The battalion XO normally conducts weekly or, in some cases, daily training support and maintenance meetings and may use the company XOs as the source of necessary information. The company XOs should use these meetings to solve as many problems as possible, and they can use the battalion XO as a facilitator for information to the battalion primary staff.

With all of these formal and informal organizational ties, the XO now knows what to include and how to get information. The XO needs to know how to set his specific objectives in writing. The single most important word in establishing the objectives is *measurable*. Whenever possible, specific guidelines, suspense dates, numbers, or conditions should be given. The XO should include key phrases gleaned from his commander and set up realistic, yet *attainable*, subordinate objectives. The objectives should have built-in incentives for deserving soldiers. The XO should also use language that expresses teamwork and team effort, such as *coordinate* and *share*. Once the list of objectives is established, the XO needs to make sure it is not too long or redundant.

The OER support form is usually due one week after the change of assignment. Too often, though, it is meticu-

lously created, turned in, and then filed away—unread—until a change in commanders or another change in duty for the XO. The OER support form is supposed to be a plan for the items to be accomplished, and management by objectives fails in these cases because the support form is not effectively implemented.

Management by objectives requires self-discipline, because it demands much of the XO. The OER support form is too often a statement of lofty ideals and objectives that prove unattainable because of time constraints and higher priorities. If the support form is to be a working document, the XO's responsibilities need to be clearly defined, understood, and met.

The Army is an institution that is suited to the concept of management by objectives. The process has already been initiated with the OER support form, but it needs to become an ongoing process. As objectives change, the form should be updated. Information from subordinates should be taken into account so that common objectives are expressed.

The job of company executive officer can be both rewarding and demanding. The new XO's success is based on a multitude of formal and informal ties. The duties vary from unit to unit, and the responsibilities can vary from day to day. The job is an integral part of the battalion's success. Management by objectives is one means of keeping track of the essential role the XO plays. The planning of objectives on the OER support form is a critical step in the MBO process. The other functions—organization, personnel, leadership by example, and control through inspections and evaluations—are elemental needs that must be met. The efficiency—and therefore the success—of an XO is measured by the accomplishment of his stated objectives.

Lieutenant Patrick M. Walsh served as a company XO in the 5th Battalion, 502d Infantry, Berlin Brigade, and as the battalion's S-3 liaison officer. He is a 1990 graduate of the United States Military Academy and holds a master's degree from the University of Southern California.





MOGADISHU, OCTOBER 1993:

PERSONAL ACCOUNT OF A RIFLE COMPANY XO

CAPTAIN CHARLES P. FERRY

When the United States first entered Somalia in December 1992 to facilitate the delivery of humanitarian aid, combat incidents were rare and, when they did happen, were on a small scale. After turning this mission over to the United Nations force in Somalia (UNISOM II), the United States left approximately 6,000 of its soldiers to ensure that the UN operations could continue without interruption.

The only U.S. combat forces in country were the quick reaction force (QRF), made up of one light infantry battalion, one attack and assault helicopter battalion, and a brigade headquarters. The first to assume the QRF infantry battalion's duties was the 2d Battalion, 87th Infantry, 10th Mountain Division (Light), followed by a sister battalion, the 1st Battalion, 22d Infantry.

In June and July 1993, UNISOM II became more aggressive and, after a Pakistani unit was badly ambushed, decided

to try to disarm the opposing clan factions in Somalia. In July the 1st Battalion, 22d Infantry, conducted several cordon and search operations in Mogadishu and a raid on the Abdi House, which received a lot of news media attention.

On 1 August my unit, the 2d Battalion, 14th Infantry—also of the 10th Division—assumed the QRF mission. I was XO of Company A.

On the first night in our university compound (see map), we were attacked by 60mm mortar fire, and two soldiers from a nearby logistical unit were wounded. This was just a taste of things to come. During August and September, the battalion conducted numerous operations—raids, attacks to clear, cordon and search, convoy security, rescue of downed helicopters—and reinforced other units engaged with Somali guerrillas under the control of General Farah Aideed.

By the end of September, every company had been

involved in several sustained firefights with the enemy and had also taken casualties. Our compound continued to be attacked by mortars, rocket-propelled grenades (RPGs), and small arms fire at least every four or five days. Although the battalion never sustained any casualties from these attacks on the compound, neighboring units did.

When the UN intensified the hunt for General Aideed in late August, the United States sent a unit of Special Operations Forces specifically equipped to conduct fast raids and prisoner recoveries. The task force, called TF Ranger, consisted of a company of Rangers, a contingent of assault and attack helicopters, and other elements. Our battalion was assigned a liaison from the task force, and our company conducted rehearsals with the Rangers to prepare for contingencies in which our assistance might be needed. The least expected of these contingencies called for us to reinforce TF Ranger in the event it was in danger of being overwhelmed, but that is the one the battalion was called upon to execute on 3-4 October 1993.

For my company, this was a nine-hour battle in which we fought our way in to the surrounded Rangers, evacuated all the casualties, and fought back out the following morning under continuous enemy fire.

During that battle, 18 U.S. soldiers were killed and more than 77 wounded. Two companies (plus) from our battalion and one company-sized element from TF Ranger more than held their own against incredible odds. We were literally surrounded, engaged in a pitched battle at night, in the heart of Aideed's guerrilla stronghold. According to intelligence reports received several days later, more than 300 Somalis were killed that night and another 700 or more wounded.

Before the Battle

From 30 September through 2 October, Company A conducted close quarters battle live fires at an old Soviet military base on the outskirts of Mogadishu. The company's morale was high as a result of an operation a few days earlier in which we conducted a successful pre-dawn raid on a confirmed mortar launching site. During our exfiltration, we became engaged in a 15-minute firefight and successfully withdrew under pressure to a nearby UN compound. Several detainees from that raid provided a wealth of information for future operations. This was one of several combat operations in which the company proved itself under fire. We were confident in our abilities and had no doubt that we would soon see combat action again.

On 2 October we received word to be prepared to move by helicopter from our training site to the Mogadishu airport. A coordinated UN operation was planned in which units from Pakistan, Malaysia, and other nations were to conduct simultaneous missions to retake several previously abandoned checkpoints throughout the city. The battalion expected to be called upon to assist and had made contingency plans to enable it to react quickly. The UN mission was cancelled, however, and we continued our training, returning to the university compound around 1100 on 3 October.

As soon as we arrived at the compound, the company

began recovery procedures. It was standing operating procedure (SOP) to conduct maintenance and redistribute ammunition so we could react quickly if alerted, even when we were not currently the QRC for the battalion. (The QRC normally had up to 30 minutes to roll out of the compound on a quick-reaction mission, although it was often faster than that. The other two rifle companies had up to an hour to be prepared to move, but were often able to do it in 15 minutes.)

I supervised recovery operations and by 1500 was able to lie down for a short nap. Around 1630 I was awakened by one of the company radio telephone operators (RTOs) and was told that Company C had just gone to alert status and was preparing to move out. When my company commander and I went over to the battalion tactical operations center (TOC) to see what was going on, we were told that TF Ranger was in the middle of an operation and might need assistance. It was obvious by the concerned look on the face of our Ranger liaison, listening intently to his radio with a set of headphones, that something was not right.

I suggested to the commander that we grab some chow now, because I had a feeling Company A would also be alerted soon. We had just sat down in the mess hall when a runner from the battalion TOC told everyone that the company was to go to RedCon 1; that is, bring the company to full alert and be prepared to roll out the gate as soon as possible. We left the mess hall and headed back to the company area.

While the company commander went back to the TOC, I supervised the issue of additional ammunition and special equipment in accordance with our rehearsed SOP. (All soldiers in the company normally kept their personal basic loads of ammunition and grenades and received AT4s, LAWs, demolitions, and the like upon going to RedCon 1.) This took 10 or 15 minutes. The first sergeant assembled the platoons and ensured that pre-combat inspections were made, while I went to the TOC to be briefed and to get guidance on how to configure the company for movement and learn what attachments it might receive. Depending on the mission, sometimes we would either walk to an objective or ride on trucks. We would normally receive an engineer squad, a forward medical treatment team (FMTT), a psychological operations (PSY-OPS) team, and a military police platoon if we were the QRF company. Since we were the second company in line this time, I wasn't sure what attachments battalion had in mind.

As I walked over to the TOC, Company C and the battalion tactical command post (TAC) moved out on HMMWVs (high-mobility multipurpose wheeled vehicles) and five-ton trucks. When I linked up with my commander in the TOC, he could tell me only that a helicopter had been shot down and the Rangers might be in trouble. A week earlier, a 10th Mountain Division UH-60 Black Hawk helicopter had been shot down, and Company C had engaged in a two or three-hour firefight to recover the crew and equipment, taking several casualties. The commander just told me to get the company lined up and ready to move.

I assembled the first sergeant and the platoon leaders and passed the information. Then I directed the platoons to take some time to make a more thorough pre-combat inspection

and to request more ammunition or special equipment if they wanted it. I also told them that I thought it looked like we would be going out.

The first sergeant and I reviewed what other tasks we needed to accomplish before the commander returned. We agreed to plus-up our contingency load of ammunition (usually at least one-half extra basic load for the company), which was normally carried on my HMMWV. We then made a company communications check, and I told my communications chief to monitor the battalion command net to find out what was going on. The first sergeant and I then began getting the company HMMWVs and five-ton trucks lined up in the SOP order of movement. By now, we had received as attachments our usual engineer squad and medical treatment team, which included the battalion surgeon.

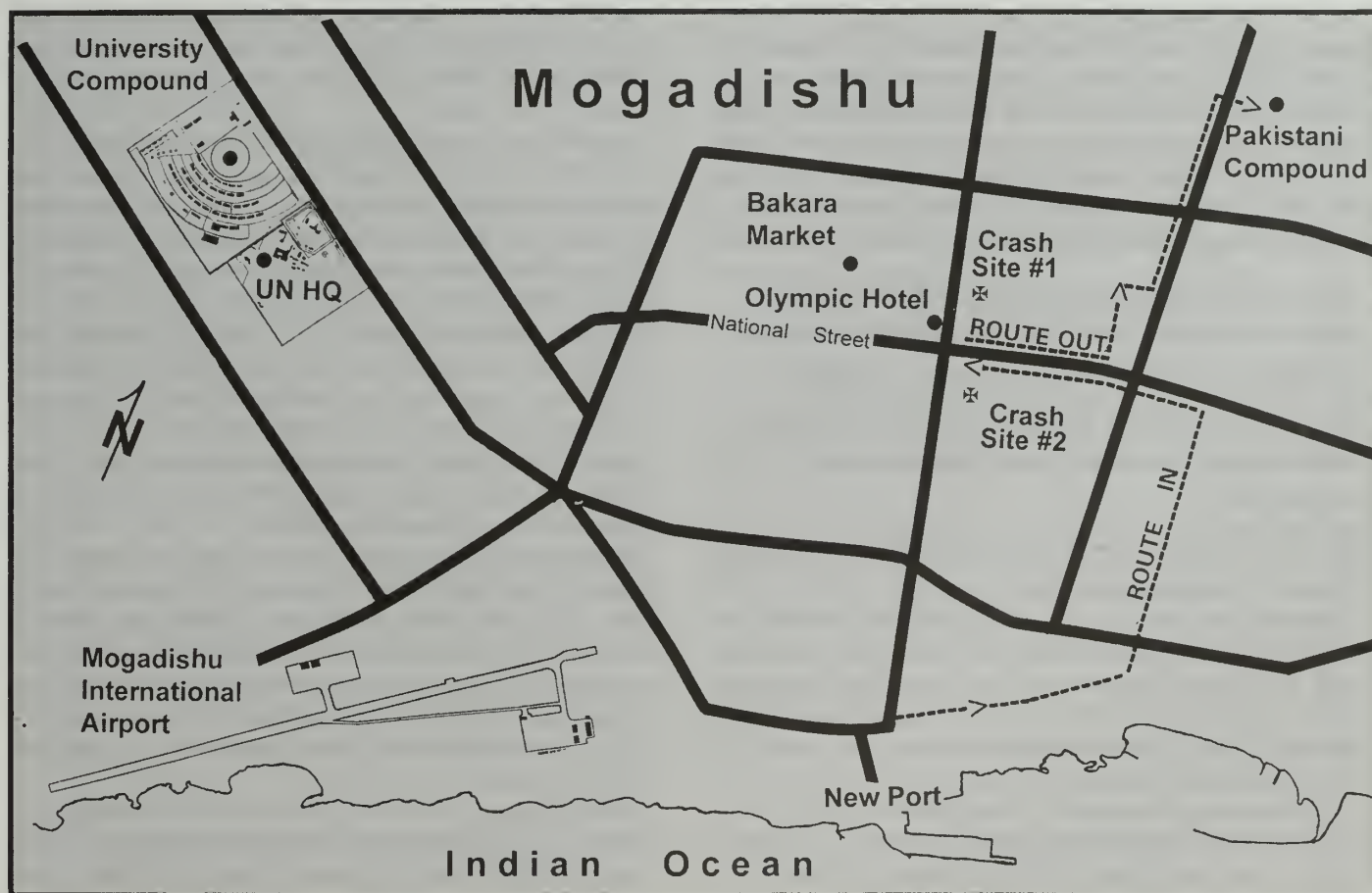
The commander soon joined me where I had the orders group gathered. He briefed essentially the same thing he had told me earlier and said we were going to move the company near the gate entrance to the compound and be prepared to reinforce Company C if needed. By 1700 the company was lined up, and we waited. Like many of our previous QRF missions, we had little information and, once we moved out on a mission, could only recheck our equipment and rely on rehearsed SOPs and battle drills.

It was late afternoon, the sun was beginning to fade, and we could hear heavy small arms and rocket fire in the dis-

tance. On the battalion command net, it soon became apparent that Company C was engaged in a stiff firefight and had sustained several casualties. The battalion TAC, consisting of two HMMWVs, was with Company C, and—judging by what we were hearing on the radio and the tracer rounds and explosions we were seeing in the city—it was obvious that something big was happening. The company commander, listening intently on the radio, tracked the battle on the map, expecting at any moment to be ordered to reinforce Company C.

Company B was also ready to move and standing by in its company area. The battalion scout platoon, the combat trains, and the PSYOPS element were lined up behind our company also preparing to move. It was almost dark. I was concerned about sitting at the gate in the open—the compound had been shelled several times over the previous month by 60mm mortar fire, and I hoped we wouldn't be hit now.

The situation was becoming clearer: Company C had been tasked to link up with the Ranger ground reaction force (GRF) platoon that was attempting to break through to a downed helicopter. The Ranger platoon had been unable to break through after being badly ambushed, losing one or two vehicles and suffering several casualties. Company C had managed to effect a link-up but was now also in heavy contact and taking casualties of its own. Company C was ordered to withdraw to the Mogadishu airport, which was near the



engagement. It was apparent that neither the Ranger GRF platoon nor Company C was going to be able to fight through to the crash site.

We still did not know the full situation of the Rangers on the ground. (By now, in fact, two helicopters had been shot down in the Bakara Market area in the heart of General Aided's guerrilla enclave. A third helicopter had been hit but had limped back to the airport. A company-size element of TF Ranger was surrounded and fighting for their lives, taking heavy casualties.) When the engaged elements were ordered to withdraw to the airfield, the company commander called for instructions. We were told to stand by, and a minute later to stand down, but to be able to be recalled to move in five minutes. Five minutes later, we heard the battalion commander order his XO to move the rest of the battalion to the airfield as soon as possible and be prepared to conduct further combat operations.

The battalion XO radioed instructions to both remaining rifle companies and support elements, breaking us up by convoy serials 10 minutes apart. Our convoy of about 15 HMMWVs and five-ton trucks moved first, with the battalion scout platoon following. We moved along the main supply route, which was a roundabout way to get to the airfield, but a secure one. It took the company about 45 minutes to get there, driving blacked out with night vision goggles.

When we arrived at the airfield at 2030 hours, the company commander reported to the battalion commander to receive instructions. Company A was lined up behind numerous vehicles from Company C and TF Ranger in what was almost a traffic jam. The company commander returned a minute later and told me a company-sized element of TF Ranger was surrounded in the Bakara Market area, had taken a lot of casualties, and was in danger of being overrun. We were to move behind Company C and the Rangers to the new port and prepare to mount another attack to break through.

Two helicopters had been shot down in the Bakara Market area in the heart of General Aided's guerrilla enclave, and a company size element of TF Ranger was surrounded and fighting for their lives, taking heavy casualties.

Company A would lead the battalion attack.

Knowing the Rangers' situation, it seemed to take forever to move the two kilometers from the airfield to the new port. After 30 minutes, the task force had moved and was now staged on a large parking lot next to the loading docks. About two dozen white, Malaysian Condor armored personnel carriers (APCs) were lined up waiting for us.

The company commander returned from the attack order and told me to hand out every bit of extra ammunition I had on my truck—essentially doubling everyone's basic load. After about ten minutes, the orders group gathered around the

commander's map, and he briefed the plan in about five minutes under a flashlight.

The Plan

The company was task organized as follows: 1st Platoon had the mortar and fire support squad, a medic, and three APCs; 2d Platoon had the engineer squad, a medic, and three APCs; 3d Platoon had a medic and two APCs. Under company control were the FMTT, with front-line ambulance (FLA) and surgeon; a Pakistani tank platoon (four T-55s) and one company HMMWV.

Enemy Situation. The Somali guerrillas completely controlled all areas outside the UN compounds during the hours of darkness. In the Bakara Market area, Aided had as many as 2,000 guerrilla fighters and a sympathetic populace as well. They were armed with a mix of Soviet bloc and NATO assault rifles, machineguns, RPG-7s, mines, and demolitions. In past firefights we had been in, the Somali guerrillas had proved to be aggressive and bold, even in the face of tremendous firepower. They were capable of operating in fire team and squad size elements and of coordinating the movement and actions of larger elements. They always seemed to know when we were coming, and on which routes, and built hasty obstacles to try to slow our mounted movement. They were fighting in their own back yard and knew it well.

Friendly Situation. A company-sized element of TF Ranger was surrounded by the enemy on the northern helicopter crash site (crash site #1). They had taken 20 to 25 casualties and were in danger of being overcome. The situation at a southern helicopter crash site (crash site #2) was unknown, and there had been no communications with that site for several hours.

A task force had been put together at the New Port to make the rescue attempt under the command of our battalion commander. It consisted of Companies A and C with Company B in reserve. The battalion antiarmor platoon, the scout platoon, and an attached antiarmor platoon from the 1st Battalion, 87th Infantry of TF 2-14 Infantry; the TF Ranger GRF platoon (six armored HMMWVs); 14 to 16 Malaysian APCs (with drivers and track commanders only); and four Pakistani T-55 tanks. Supporting the task force were 10th Mountain Division Cobras and other attack helicopters.

Mission. Company A was to attack to break through and link up with the besieged Rangers at the northern crash site to recover all American casualties.

Execution. The concept of the operation was simple. The company would ride on the Malaysian APCs, attack mounted as far as possible, and break through to TF Ranger. Once on the crash site, we would load the casualties onto the APCs and fight back out to a secure UN compound. The order of movement to the objective would be tanks, commander, 1st and 3d Platoons, followed by the HMMWV FLA and the rest of the battalion.

The company commander made sure we all understood that we would not come back without all American dead and wounded. As was usual for combat missions, I back-briefed him on the complete plan, order of movement, and contin-

gencies, to make sure I knew what to do if he should become a casualty. He decided to take his HMMWV with its two powerful radios for command and control, despite the fact that he and his RTOs would be more susceptible to enemy fire in it. (This later proved to be a good decision.) I was to move at the rear of the last platoon, in one of the HMMWVs of the attached platoon, so that I could better see to navigate along the attack route.

While the company commander went to make final coordination with the Pakistani tank platoon leader and the Malaysian company commander, I supervised getting the platoons loaded on the APCs. The Malaysian soldiers did not speak English but showed us how the APC weapons and doors worked. Being light infantrymen, none of us were accustomed to riding inside an armored vehicle, but it seemed like the way to go, considering the enemy situation and the importance of moving quickly.

The company was ready to move by 2145. I found the company commander, who seemed to be negotiating with the Pakistani tank commander about the route. Both the Malaysians and the Pakistanis had U.S. liaison officers with them, but neither officer seemed to be able to influence what their units would do. It seemed that the tank commander had been ordered to go only about half-way to the objective, and that did not support the plan. The issue finally seemed to be resolved, however, and we prepared to move out.

It took a few more minutes to get the lead tank platoon to move. A sharp exchange over the radio between the company commander, the battalion commander, and the Pakistani liaison officer eventually did the trick. About 2200 the rescue column began to move north along the designated route toward National Street.

The city was very dark, and the street we were on ran west and then turned north again. For a while it was quiet as our vehicles moved toward National Street. The battalion command net was heavy with traffic, and my RTO kept me informed. The anticipation of enemy contact was agonizing. Every alley and building was a potential Somali ambush position. The lead element of the company made the turn onto National Street and headed west. I made the turn and reported to the company commander.

Suddenly, near the head of the column, red streams of enemy fire erupted from both sides of the street, and the familiar sound of incoming small arms and RPG fire broke the silence. Almost simultaneously, return fire was concentrated on several buildings and alleys. After about two minutes or so, the firing died down and we continued to move. After moving several more blocks, the entire company came under fire. Small arms fire whizzed over my HMMWV, and an RPG round exploded near the vehicle in front of me. Everyone in the column was firing into every building and alley that could be used as an enemy firing point.

I had stepped out of the HMMWV, crouching for cover, trying to monitor the company and battalion nets. The sound of small arms fire mixed with enemy RPG, friendly MK19 automatic grenade launcher, and M203 round explosions was deafening. My RTO yelled that he saw some Somalis and

started firing down an alley. I turned, spotting the running men and also engaged them. They disappeared into the darkness. Not knowing whether we hit them, I returned to the company net and called the company commander to try and get guidance on what he wanted. I recommended that the company dismount and fight forward on foot, since I felt that the APCs were attracting the heavy RPG fire and was concerned that entire squads might be destroyed inside them. But the company commander said the battalion commander's

In past firefights, the Somali guerrillas—armed with a mix of Soviet bloc and NATO assault rifles, machineguns, RPG-7s, mines, and demolitions—had proved to be aggressive and bold, even in the face of tremendous firepower.

orders were to fight mounted as far as we could. (He was absolutely right, because the APCs were crucial to our task of evacuating the wounded once we had linked up with TF Ranger.)

The column started moving again under steady enemy fire. I called all the platoon leaders to remind them to exercise fire discipline, because we did not want to run out of ammunition. Communications with the platoons were not very good, because they were inside the APCs and their radios were not transmitting well, but all three acknowledged.

The column kept moving and stopping. Along with the commander and first sergeant, 2d Platoon had dismounted to clear several obstacles. I again asked the commander if we could dismount, and his RTO said, "Negative." The Pakistani tank platoon was now nowhere in sight, and I didn't see them again until the next morning (apparently, they had been ordered to go only so far on National Street and not to advance any farther).

The column again stopped five or six blocks short of the turn toward the Olympic Hotel. The two lead APCs, with the 2d Platoon leader, one of his squads and an engineer team, were separated from the company. The platoon leader had been unable to get his Malaysian driver either to make the correct turn or to stop. The two lead APCs continued down National Street past the intersection where the company was supposed to turn north and continued out of sight of the company commander. The commander repeatedly tried to contact him by radio without success. This element was now separated from the company and out of communications, and we would not hear from them again until early on the morning of the 4th.

(After being separated and taking a wrong turn to the south, their vehicles were stopped and ambushed. Both vehicles were hit by multiple RPG rounds. The lead APC was set on fire, killing one Malaysian and wounding two soldiers of 2d Platoon. Just after they dismounted the APC, it was destroyed by coordinated RPG fire. The platoon leader ordered his surrounded element into a nearby building—after

blowing a breach point into it with a large satchel charge from the engineers. For the next several hours, they fought for their lives until Company C finally linked up with them.)

The company commander now decided he must continue the mission instead of trying to recover the two lead squads. When the new lead APC halted at another obstacle and enemy fire intensified, the commander decided to dismount. The rest of 2d Platoon, under the leadership of the platoon

Suddenly, near the head of the column, red streams of enemy fire erupted from both sides of the street, and the familiar sound of incoming small arms and RPG fire broke the silence. Almost simultaneously, return fire was concentrated on several buildings and alleys.

sergeant, was already clearing the obstacle by hand while one squad with its M60 machinegunner laid down suppressive fire. I got off my HMMWV and moved up the company column pounding on the APCs to get 1st and 3d Platoons to dismount, and then directed them up toward the lead element of the company. Enemy fire was still flying everywhere, but the soldiers moved quickly along both sides of the street. Squads moved across alleys and streets by having one fire team lay down suppressive fire while the other bounded across.

We were now by the main intersection of National Street and the street Olympic Hotel was on. The company was stretched out about three city blocks on both sides, with the APCs in the middle. I made my way to the commander to get an idea what he wanted. He said we would continue to fight into the northern crash site, but that he was having a hard time getting the Malaysian APCs to move under fire. I moved back to tell the leaders of 1st and 3d Platoons what we were going to do and to push the rest of the company forward.

The company again started to advance, attacking toward the Olympic Hotel (the original objective of TF Ranger several hours earlier). We had no direct communication with the APCs; so I had to move into the street several times to pound on them and motion them forward. They were buttoned up, making it difficult to get their attention or to direct the fires of their heavy machineguns, which they were not firing. I ran back to the attached antitank platoon, which was still firing to the south and north along National Street, and told the platoon leader that my company had started to make the right turn up to the north and they needed to watch their fires, especially the MK19 that was pounding some nearby buildings from which they had taken fire. After cautioning him to maintain control of his fires and watch his ammunition, I moved back toward the front of the company, by now three or four city blocks up the street.

Laboring heavily under the weight of the AN/PRC-77 with his ear to the hand mike, my radio operator kept me updated on what battalion was saying and constantly reminded me to stay out of the street.

When I made the turn back north, the company was stopped, with a lot of incoming and outgoing fire. So I wouldn't be mistaken for a Somali, I yelled, "XO coming through," and moved up past 3d Platoon, which was hunkered down on both sides of the street. A destroyed U.S. five-ton truck was still smoldering in the middle of the street. Both 1st and 2d Platoons were taking and returning a large amount of small arms fire from the Olympic Hotel and nearby buildings and alleys. One APC was up next to the lead platoon. The M60 gunner was mortally wounded, and two other soldiers were hit and yelling for a medic. The battalion surgeon, the first sergeant, and two soldiers from 1st Platoon moved into the intersection under fire to give them aid. Nearby, soldiers laid down heavy suppressive fire until the casualties could be pulled into the relative safety of a depression next to a building.

The commander was pinned down with 1st Platoon. There was bad crossfire from the hotel and several buildings. Despite the efforts of the liaison officer, the lead Malaysian APC refused to move, effectively stopping the company's progress. The company was only five or six blocks from TF Ranger and having a hard time pinpointing which street we should take to make a link-up. (Our maps often did not match up with the ground, and it was difficult to find intersections, especially at night.) The commander moved into the street to make the lead APC move and wanted me to call battalion to get a better fix on where the Rangers were.

I moved back to where the casualties were being cared for under cover and called the battalion commander on the radio. I gave him a brief situation report and our casualty status, and told him we were having difficulty getting a fix on the Rangers' position. He said to continue to push to link up and he would get the Ranger liaison, who was with him, to notify the surrounded element that we were nearby and have them ensure that their infrared strobe lights were on (the link-up signal). The company commander then came on the radio to give the battalion commander a more detailed report.

The company was still pinned down, and the commander told me to get a HMMWV with a MK19 up to the front of the company. I left my RTO with the casualties and moved back along the column, carrying an AN/PRC-126 squad radio on the company net anyway.

Three or four blocks back through the company, on National Street, I found a MK19 HMMWV near the front of the column, the squad leader coolly directing the fires of his MK19 gunner. I told him we needed his firepower and to inform his platoon leader I was taking him. Enemy fire was still intense, and there was still heavy friendly fire all along National Street where the battalion TAC, the antiarmor platoon, and the scouts were. We worked our way back through the company, the MK19 HMMWV following me. It was having a hard time getting by the APCs, and I had to ground-guide it up on the sidewalk several times.

We finally reached the front of the company where the lead APC was stopped and learned that the fire was coming from the large hotel on the left side of the street, about 50 meters to the front of the lead platoon. I guided the MK19 HMMWV

up onto a steep sidewalk so the gunner could get an effective shot and told him to watch my M16 tracer rounds and to work the building from top to bottom. I fired several tracers into the hotel; he fired a spotting round into one of the top-story windows and then fired the grenade launcher on automatic, hitting every single window in the building. The effects were devastating. Concrete fragments flew everywhere, and one or two Somalis fell out of the building.

When the gunner ceased fire, I asked the lead man again where the fire was coming from now. He said it was from the right side of the road. I made sure I could see our lead man on the right side and directed MK19 fires onto a building about 40 meters in front of him. I felt that if we could start attacking forward again the APCs would follow.

I crossed to the left side of the road where the lead man was and told him we were going to continue the attack. I moved to the front of the platoon and forward about a block. The platoon then stopped and directed fires onto the opposite side of the street to cover the lead squad, which now bounded forward. Both squads had fired and maneuvered forward about a block, and I moved back to the casualty collection point (CCP).

The battalion surgeon had stabilized the two wounded soldiers at the CCP, behind 1st Platoon in a small depression next to a building. I had my RTO turn his radio to the battalion administration/logistics net so I could make a casualty report and coordinate a medevac. The battalion XO wanted to send a ground medevac forward from the New Port, but I asked him to stand by. I knew an aerial medevac would be destroyed and a ground medevac would almost certainly be ambushed. I also felt there might be more urgent casualties soon and didn't want to waste the asset yet; the surgeon said he could keep the casualties stable for at least several hours. I called the battalion XO and told him I wanted to keep the casualties with us.

As the company was advancing toward the embattled Rangers, 3d Platoon had moved up next to the CCP. 1st Platoon had taken the lead of the company and was eliminating sniper positions as it neared the Rangers' position. The company's senior medic brought the HMMWV FLA forward, and we loaded the wounded soldiers onto it while 3d Platoon poured suppressive fire down the alleys to cover us. By the time we had finished, the entire company had passed us.

I told the FLA driver and the commander's HMMWV driver to stay with the antiarmor platoon near National Street and then led the FMTT and my RTO to catch up with the company several blocks in front of us. We moved at double time past several alleys from which we received sporadic small arms fire, and in a short time linked up with the company again.

The lead elements of 1st Platoon made contact with the Rangers around 0030 hours. The company commander linked up with the TF Ranger commander to coordinate the recovery of casualties. The first sergeant, the platoon leaders, and I met with the commander to get instructions on how he wanted the company deployed. Our company commander continued to direct the operation, while the Ranger commander concentrated his efforts on his casualties.

The situation on the objective was well under control. The TF Ranger soldiers were consolidated in two or three buildings with security, while more than 20 wounded and three or four dead soldiers were being kept inside. The Black Hawk helicopter was just outside the perimeter on the east side, crushed in between two buildings, with the dead pilot trapped inside. We were still receiving small arms and RPG fire, but as long as we stayed out of the intersections, we were fine. The Special Operations soldiers were understandably tired and short of water and ammunition. They seemed happy to see us, and we were happy to see them as well.

The company commander and the platoon leaders quickly deployed the company into a perimeter around TF Ranger. I went to one of the buildings to coordinate with the medics for the loading of their casualties onto the APCs. Inaccurate small arms fire was still coming in, with an occasional RPG round landing near the APCs; the APCs were attracting most of the enemy fire now. I had to go into the street numerous times to bang on the driver's periscope to get his attention and then guide him forward. Eventually, we got two APCs into the perimeter and next to one of the buildings where the medics began to load the casualties. I talked with several soldiers to find out how many wounded they had and where they were, so I could move other APCs into position.

Out in the street, another of our soldiers was wounded by RPG rounds fired from a nearby building, and a minute later, without warning, an attack helicopter hit the building with 20mm cannon and 2.75-inch rocket fire. I thought the helicopter was firing on our position until I saw the tracers hitting the building only 50 meters north of our position. The expended shell casings dropped into the perimeter. I told the officer who was controlling the air strike to warn us next

As soon as the company began to move, heavy small arms and RPG fire erupted on all sides. Squads and platoons bounded by fire and movement, laying down heavy suppressive fire, while elements sprinted across alleys. The Somalis seemed to know we were making a break for it and were giving us all they could.

time. I had never been so close to an air strike, and all of us were plenty scared. For the next several hours, aircraft continued to fire all around our position 35 to 60 meters from us.

I continued guiding the APCs around. As one was filled, another one moved up to receive casualties. While the casualties were being loaded, several TF Ranger soldiers and one of our squads moved to the helicopter crash site to try to extricate the body of the pilot. One of the soldiers had a power saw for just such a purpose. Meanwhile, four or five other APCs were filled with dead and wounded. By 0330 all casualties were loaded—about 20 wounded and three or four dead.

During this time, small arms and RPG fire continued to come into the company position. At one point the Somalis fired hand-held illumination flares and shortly afterward, we received several mortar rounds in the perimeter, wounding one soldier. Enemy fire would build, two or three RPG rounds would be launched into our position, followed by heavy outgoing suppressive fire and attack helicopter strikes; then things would quiet down for a few minutes. This cycle continued until morning. Three more men from the company were wounded, stabilized, and loaded with the other wounded.

On the south side of the perimeter, we began receiving heavy machinegun fire, most of it two or three feet over our heads. The commander, the first sergeant, and I had been running from position to position through the night, checking the perimeter and reassuring the soldiers. The incoming fire was from the south, mostly machinegun and sporadic RPG fire that was landing about a block away. No one was firing back because the fire was ineffective, and we knew we had friendly units (Company C and the battalion TAC) to our south. At first I thought it was friendly fire, but battalion assured us that no friendly unit was firing to the north. The commander repeated his previous instructions to engage only well-identified targets to the south. The 2d Platoon showed tremendous fire discipline, engaging only a few targets, and about half an hour later the fire died down a bit.

Meanwhile, the team trying to extricate the dead pilot from the Black Hawk was not making much progress. The power saw was taking too long, and one of the Delta operators asked if we had a cable. We did not, but I remembered that armored vehicles usually have tow cables. I found one mounted on the driver's side of an APC, pulled it off with the help of my RTO, and gave it to the recovery team. They took the MK19 HMMWV and the cable and pulled the aircraft apart one piece at a time while the rest of the team provided covering

The company was now spread out along a distance of four or five city blocks, firing and maneuvering at a fast pace. In the tight confines of the streets and alleys, the incoming and outgoing fire was deafening.

fire (the Black Hawk was still attracting Somali gunfire). The rest of the company and the Rangers stayed in the perimeter awaiting word to move out.

At 0500 the recovery team was still trying to recover the pilot. We all knew that once the sun came up it would be difficult to fight our way back out, but we knew we couldn't leave without the dead pilot. By now, the company commander and the Ranger commander were wargaming how we would fight back out. The APCs we had ridden on earlier were now full of wounded, the sun would negate our night

vision advantage, and it was more than three kilometers through the city to the nearest UN compound.

The battalion commander put an end to the discussion by ordering us to exfiltrate back to National Street by the same route we had come in on. The street was secured by the TAC, the scout and antiarmor platoons, the Ranger GRF platoon, and some Malaysian APCs and Pakistani tanks. It was the only road that would really allow the movement of the APCs and tanks; many of the side streets were too narrow.

By 0600 the pilot's body had been recovered and placed on the MK19 HMMWV. The order of march back to National Street would be 3d Platoon, 1st Platoon, 2d Platoon, and then TF Ranger. The APCs would travel in the middle of the formation.

The sun was now up, and 3d Platoon began to move out quickly. The commander moved behind them, and the first sergeant and I picked up the trail of the company, with the Rangers behind us. Although I was not told so, I felt it was my responsibility as company XO to ensure that not only my own company was cleared off the objective but also the 60 or so of TF Ranger who were still effective.

As soon as the company began to move, heavy small arms and RPG fire erupted on all sides. Squads and platoons bounded by fire and movement, laying down heavy suppressive fire, while elements sprinted across alleys. Several Somali gunmen were shot and killed at almost point-blank range by the lead element. The Somalis seemed to know we were making a break for it and were giving us all they could.

The company was now spread out along a distance of four or five city blocks, firing and maneuvering at a fast pace. In the tight confines of the streets and alleys, the incoming and outgoing fire was deafening. The commander directed Cobra gunship strikes along both sides of the road to cover our movement and to suppress heavy fire from the Olympic Hotel. Several more soldiers hit by small arms fire were quickly treated and put on a nearby APC. The Malaysian APC machinegunners were now spraying the second and third floors of surrounding buildings. The lead platoon of the company was now moving so fast that 2d Platoon and the Ranger soldiers were falling behind. Several times, other leaders and I had to run into the street to get the Malaysian APCs moving again.

As my RTO and I neared the hotel, an RPG round exploded several feet behind me. A few moments later, my RTO was hit by a bullet through the arm; its force spun him around and knocked him down. Although bleeding, he picked up his M16, and the first sergeant applied an ace bandage on the move.

I returned my attention to the TF Ranger element that was beginning to break contact with us. They were visibly tired, having to double-time and fight, and many of them were walking wounded. I moved back to encourage them to keep up and continued to bang on the APCs to keep them moving. Now intermingled with the TF Ranger element, I maneuvered with them, trying to make sure everyone stayed together.

The rest of Company A had now reached National Street, and the commander told everyone to get on a vehicle any way

they could. When the Ranger element and I reached the intersection that turned onto National Street, it was receiving heavy automatic fire from two directions. Several Rangers and I laid heavy suppressive fire down both streets while the rest of the element rushed past onto National. We then ran to catch up with the company.

We linked up with the rest of the battalion, and there was still a lot of fire, both incoming and outgoing, especially near the rear of the column at the intersection we had just passed. I grabbed an antiarmor platoon machinegunner and told him where to direct his fires to cover us while we loaded onto vehicles. While the TF Ranger soldiers loaded, I double-timed forward to let the commander know we were clear of the objective. I ran past several alleys and had to be careful as many soldiers were firing off the vehicles; I had to run up behind a vehicle to get their attention before running past.

I eventually came upon the TAC, with the battalion commander, the sergeant major, and the battalion S-3. I told the battalion commander we were cleared off the objective and asked if he would relay that information to the company commander. (I had failed to retrieve my battalion net radio when the RTO was hit, and my small squad radio on company net was not reaching the commander.)

I jumped onto a vehicle loaded with the scout platoon, whose leader had one radio on the battalion net. Then I heard the division commander, in a command and control helicopter overhead, tell the battalion commander that several special operations soldiers were still making their way to National Street. I couldn't believe it; I thought we had everyone. I jumped off the vehicle and ran to the rear of the formation, where I could see two Pakistani T-55 tanks and two M113 APCs moving fast to catch up to the column. Behind them, six or seven soldiers were running as fast as they could under fire to catch the vehicles. But the APCs didn't stop.

I ran up to two armored TF Ranger HMMWVs and sent them back to retrieve the soldiers. I jumped in back with the Rangers, and the HMMWVs moved backwards 400 to 500 meters toward the intersection that was receiving heavy fire. Over our heads in the back, the .50 caliber machineguns fired, suppressing both sides of the road for the running soldiers (and nearly blowing out our eardrums). Once we were near the intersection, the HMMWVs stopped and I jumped out to help the soldiers get onto the vehicles. Small arms fire buzzed all around us and for a few moments we were badly exposed. Both HMMWVs were so full that there was no room for me, so I jumped onto the hood of the front vehicle and hung on for my life as we sped to catch up to the column. Soldiers in the back fired at every alley, taking no chances of being hit.

Soon we were with the column, and I jumped off and ran forward through the convoy to find a safer ride and a vehicle with a battalion net radio so I could tell the company and battalion commanders that the last element was out. I found the S-2's vehicle and jumped on. My message was relayed, and we finally began moving east along National Street toward the Pakistani compound (in an athletic stadium). Sporadic fire was still coming in, and everyone in the vehicles suppressed alleys and intersections as they passed.

Finally, the firing began to die down as we neared the sta-

dium. When the convoy pulled into the safety of the compound, I breathed a sigh of relief. I dismounted the vehicle I was on and moved back to make sure the casualties were being unloaded. Then I moved inside the stadium to find my company. I was physically and mentally exhausted, dripping with sweat, and my cargo pockets bulged with empty M16 magazines. I had fired more than eight magazines and had

Inside the stadium, dozens of wounded soldiers were spread out going through triage with medics and doctors. Medevac helicopters continued to fly in and out with wounded.

three left that I had reloaded from the first sergeant's extra bandolier.

Inside the stadium, dozens of wounded soldiers were spread out going through triage with medics and doctors. Medevac helicopters continued to fly in and out with wounded. I found the company commander and the first sergeant, who looked as tired as I did. Then I found my RTO on a stretcher, awaiting his turn for medevac. He was going to be fine.

Several hours later, the company was airlifted back to the university compound and, per SOP, we began recovery and prepared to go out again if we were called.

The mission to relieve the Rangers and recover all the dead and wounded was a complete success for the company. In all, Company A's casualties were one killed in action, one died of wounds, and 15 wounded in action. Numerous other soldiers had minor injuries.

Despite these casualties, the company as a whole felt proud of accomplishing the mission under very tough combat conditions. We had fought our way in, retrieved all American soldiers, and fought back out again, essentially according to plan. In about four days, after a full recovery and a memorial service for our dead, the company was prepared for, and expected, further combat operations. A cease fire had been declared, however, and we had only minor enemy contact until we left Somalia in December.

EDITOR'S NOTE: In the November-December 1994 issue of INFANTRY, Captain Ferry will complete his account of the battle in Mogadishu with a detailed discussion of the lessons learned from the combat operations his unit conducted in Somalia. These lessons apply specifically at company level and below.

Captain Charles P. Ferry also served as a rifle and scout platoon leader and as S-1 in the 2d Battalion, 14th Infantry, and is now assigned to the 82d Airborne Division. Before his commissioning, he served as an infantry mortarman and a Special Forces weapons sergeant. He is a 1989 ROTC graduate of Brigham Young University.



DIEN BIEN PHU 1954:

A HISTORICAL PERSPECTIVE

CAPTAIN JAMES R. NAGEL

Dien Bien Phu, a small village in the northwest corner of Vietnam (Map 1), hardly seems like an appropriate site for a decisive 20th century battle. Yet the Viet Minh guerrilla victory over the modern and mobile French Colonial Army shocked the Western world and served as the vortex that eventually drew United States military forces into the war.

Many of the important lessons learned by both sides in that battle almost 40 years ago are still relevant today.

The Viet Minh victory came as a result of the massing of superior combat forces, the employment and concentration of artillery, an uninterrupted and innovative logistical system, and the inability of the French Army to supply its Dien Bien

Phu garrison. This was a tremendous infantry battle, with superhuman acts of leadership and valor on each side. In order to understand the battle's significance, it is important to review some historical, political, and economic factors that influenced the military decisions.

By the early 1950s the Western Allies—frustrated by the stalemate in Korea—either overlooked or underestimated the communist guerrilla movement in Southeast Asia, led by General Vo Nguyen Giap. China allowed the Viet Minh to seek refuge within its borders and openly trained and equipped them as well. In fact, the Viet Minh even received large amounts of U.S. arms and equipment that the Chinese had captured during the Korean War.

Increasingly thwarted by an enemy who melted into the jungle and avoided decisive engagement, the French established a garrison at Dien Bien Phu to provoke a Viet Minh attack. They wanted to engage the communists in a set-piece, World War II-style battle. Their strategy was sound, but their tactics, planning, and methods proved inadequate.

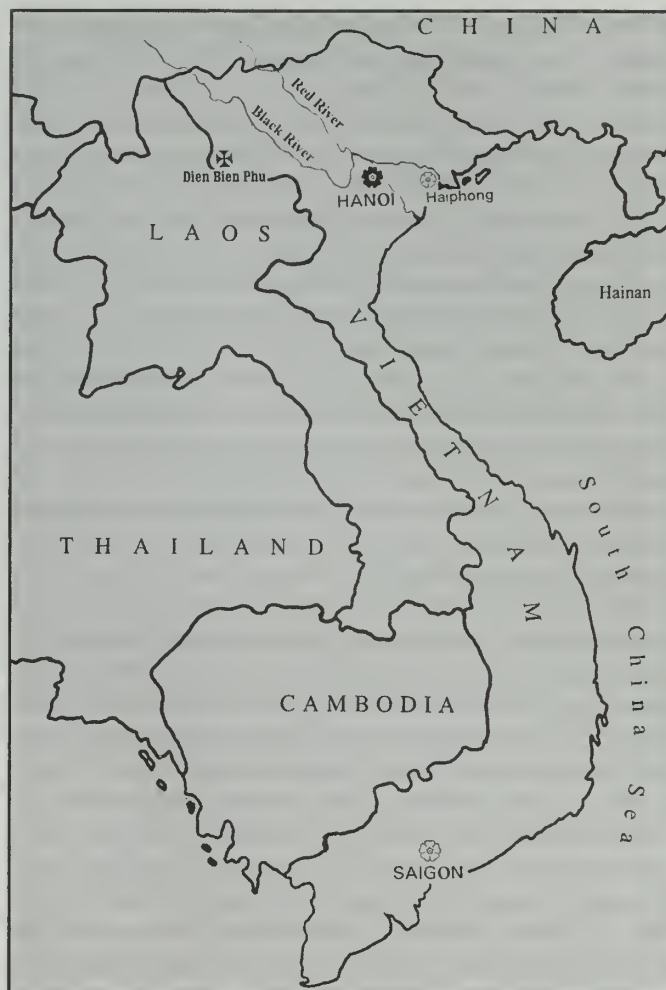
Viet Minh guerrillas had organized in 1944 as a nationalistic movement that initially sought to evict the Japanese. The French and the Viet Minh had fought a series of small skirmishes throughout the late 1940s. Due to the post-World War II economy, France could not afford a military force large enough to oppose the communists in its colony of Vietnam, and as a result of Chinese aid, the Viet Minh guerrillas soon evolved into a full, regular field army equipped with artillery. In an attempt to stop communist guerrillas from infiltration, the French had built a series of forts along the border between Vietnam and China. The manpower required to garrison the forts had been massive, the bulk of it drawn from the local T'ai population and led by a cadre of French officers and non-commissioned officers.

In late 1950 General Giap decided to confront the French directly. By 1 October the Viet Minh had trained 14 battalions of regular infantry and three of artillery and began attacking the French border forts.

The northern forces of the French Indochina Army were stationed near Hanoi, Haiphong, and the Red River Delta area. The border outposts were 300 miles from the nearest main French forces in the Red River Delta region, and by 17 October the 10,000 troops occupying the forts were overrun. The French Colonial Army suffered a tremendous defeat and lost more than 6,000 troops, 13 artillery pieces, 125 mortars, 450 trucks, three armored platoons of equipment, and thousands of machineguns and small arms.

By January 1951 the Viet Minh controlled all the area north of the Red River. General Giap wanted to defeat the French quickly while the United States was still preoccupied with the Korean War and unable to offer them any significant assistance.

Marshal Jean de Lattre de Tassigny, the French commander in Vietnam since the previous January, attempted a more offensive strategy, and French artillery, air support, and mobile armored combat teams inflicted tremendous losses on the Viet Minh during a series of engagements in the Spring of 1951. Marshal de Lattre was eager to report good news on



Map 1

the war's progress to his military and political leaders in France, because the French Parliament was debating the military budget and public support for the war was eroding; the French government even passed a law restricting the use of army draftees in Indochina.

During 1951 and 1952 the Viet Minh and the French fought a series of seesaw battles in the Red River Delta and the Northwestern Highlands. Viet Minh forces moved farther west into the mountainous areas near the Laotian border. In November 1952 the French High Command planned a deep stab into the Viet Minh rear area along the Red River in an attempt to force them to fight. The operation consisted of more than 30,000 men in an airborne, armored, and naval attack. Due to their excellent intelligence system, however, the Viet Minh learned of the plan and avoided decisive contact. Again, the French force failed to draw the Viet Minh regular units into an open battle where French superiority in firepower, mobility, and air power could be brought to bear.

When the Viet Minh invaded Laos in early 1953, the French High Command again decided to defend a series of border strongpoints whose mission was to contain the bulk of the Viet Minh forces until a Laotian Army could be trained. In October 1953 France signed a treaty of association with Laos that implied mutual defense, and French political and

military leaders felt that abandoning northern Laos might cause other neighboring nations to lose confidence in France's ability to protect them.

Thus, the French government committed its already overextended armed forces to defend the vast area of northern Laos. But the Viet Minh captured this new series of strongpoints one at a time, also destroying several French mobile armored groups in the process. While the French rarely sent their forces off the few existing roads, the Viet Minh moved freely through the jungle and forests. Complete control of the sky by the French Air Force helped in some battles, but the Viet Minh became masters of camouflage. In addition, the communist anti-aircraft fire became increasingly accurate because of new equipment and training provided by the Chinese. In 1953 ten of the 450 aircraft in the French Indochina Air Force were shot down and 244 hit, foreshadowing the important role Viet Minh anti-aircraft gunners would play at Dien Bien Phu.

After the death of Marshal de Lattre in January 1952, General Raoul Salan, who had assumed command of the French forces, told his civilian superiors in Paris early in 1953 of the importance of Dien Bien Phu. He emphasized the use of the town as an air base and a garrison outpost to block Viet Minh movement into Laos. Salan's ideas continued when his successor, Lieutenant General Henri Navarre, took command of the Indochina theater in May 1953.

Navarre's plan was to establish a series of strongly defended positions in the Viet Minh's rear areas at Na-San, Lai Chau, and Dien Bien Phu, thus causing Giap to split his forces to protect these areas. Navarre was confident that he could destroy the Viet Minh within 18 months and occupy all of Vietnam. He justified the occupation of the Dien Bien Phu area by saying its seizure would place a fortified French position directly in the operational area of a known Viet Minh division; it would control a principal avenue of approach into Laos; and it would destroy supplies of rice that were believed to be vital to the Viet Minh. On 20 November 1953 three French parachute infantry battalions landed in Dien Bien Phu and seized the small village and the surrounding valley floor.

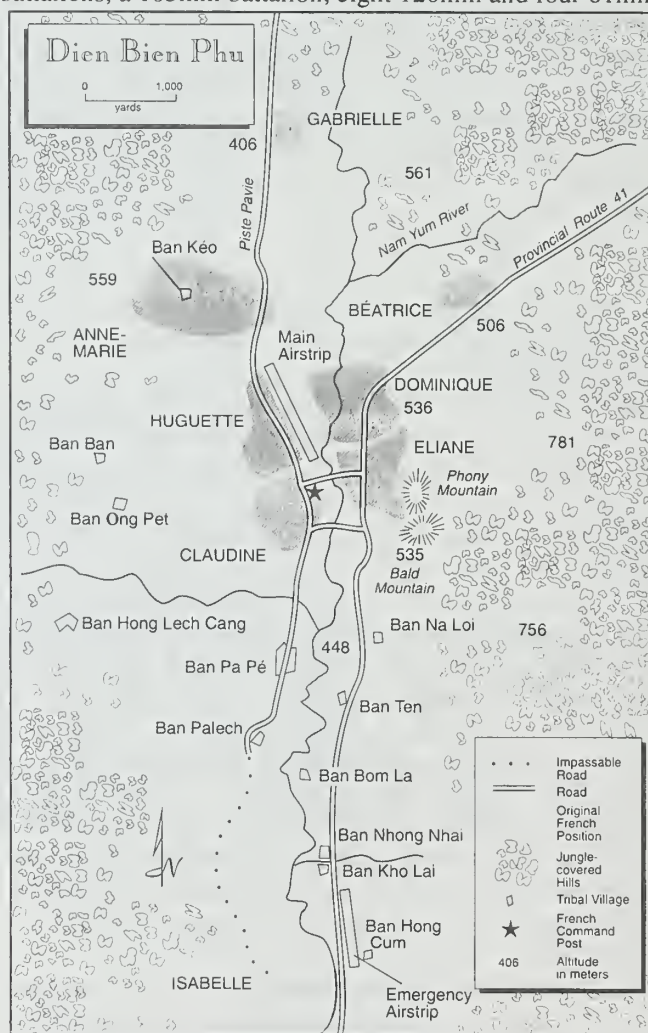
After driving off minor enemy forces, the French repaired the valley's World War II-era airfield and began hundreds of parachute drops and supply plane landings. By 30 November the Dien Bien Phu garrison numbered almost 5,000 men and consisted of five parachute battalions, two 105mm howitzer batteries, two engineer companies, a heavy mortar company, a signal company, and a headquarters detachment.

The sheer size of the valley—18 kilometers long and six to eight kilometers wide—kept the French from occupying the tactically important high ground around it. Given the eight-kilometer radius of the defensive area around the airfield, the outer perimeter measured approximately 31 miles. The French had learned from their previous experience in Indochina that one 700-man infantry battalion could defend a perimeter of no more than 1,500 yards; therefore, they would need 25,500 men to properly defend the Dien Bien Phu perimeter.

Several senior colonels in Indochina turned down command of Dien Bien Phu because they thought the occupation of such a far-flung area would eventually lead to a French defeat. This was the first indication of a difference of opinion among senior French officers in Indochina. Finally, Colonel Christian de Castries, an artillery officer, was chosen and assumed command of the garrison.

De Castries organized the defense of Dien Bien Phu into nine strongpoint areas named Gabrielle, Anne-Marie, Beatrice, Dominique, Eliane, Claudine, Francoise, Huguette, and Isabelle. Eight of the defensive areas were around the main airstrip while the ninth, Isabelle, was seven kilometers to the south (Map 2). De Castries now had 10,800 men organized into 11 infantry battalions, two 105mm artillery battalions, one 155mm artillery battery, three 120mm mortar companies, one engineer battalion, one squadron of ten M24 light tanks, 12 combat and reconnaissance aircraft, more than 200 vehicles, and various signal, medical, ordnance, and quartermaster units.

In strongpoint Isabelle, de Castries positioned two infantry battalions, a 105mm battalion, eight 120mm and four 81mm



Map 2. From *Dien Bien Phu: The Epic Battle America Forgot*, by Howard R. Simpson (Brassey's, 1994; \$24.00). Used by permission.

mortars, and a tank platoon. All nine of the positions were virtually on the valley floor, but Isabelle was in a swamp. Between March and August, the Dien Bien Phu valley had received more than 60 inches of rain, the effects of which proved disastrous to the French. The average elevation of French defensive positions was 365 meters, and the two highest strongpoints, Gabrielle (91 meters) and Beatrice (509

The sheer size of the valley—18 kilometers long and six to eight kilometers wide—kept the French from occupying the tactically important surrounding high ground. To properly defend the outer perimeter of approximately 30 miles, they would need more than 25,000 men.

meters), prevented the enemy from firing directly on most of the airstrip.

The Viet Minh occupied the ridge lines without a fight and held a continuous hill line (average elevation 1,100 meters) only 5,500 meters from the center of the main French defensive positions and an even closer hill (550 meters elevation) just 2,500 meters from the garrison's center. The failure of the French to occupy and fortify this key terrain later proved disastrous.

By the time the French had occupied the valley and decided that Dien Bien Phu would require extensive fortifications to resist the anticipated communist attacks, they had already lost valuable transportation time for moving construction materials.

In December 1953 the senior engineer officer informed Colonel de Castries that fortifying the positions to withstand 105mm howitzer bombardments would require 36,000 tons of construction material. Since the Viet Minh completely surrounded the garrison in late December, the only way to bring this material in was by aircraft. Unfortunately, the French did not have either the time or the number of aircraft needed to fly anywhere near that amount of materials. Worse, General Rene Cagny, the Northern Vietnam area commander, did not think reinforced fortifications were necessary.

As a result of the conflicting missions, logistical problems, rain-soaked ground, and higher headquarters' disregard of the tactical situation and the available intelligence, the Dien Bien Phu garrison would face the impending communist attack without even the basic fortifications.

Meanwhile, General Giap had developed his own plan to control all of Vietnam; his intent was to cause the French to disperse their forces throughout Vietnam. Once they had done this, Giap conducted guerrilla attacks that caused the French to position their forces in isolated frontier garrisons, overextending their already strained line of communication. Fully one-third of the French combat forces in Indochina were dispersed and committed to guarding bridges, dikes, and telephone lines, and rebuilding roads.

General Navarre's High Command issued the Dien Bien Phu garrison the following missions: It was to use "at least half" of its soldiers to conduct counter-reconnaissance operations to prevent the enemy from laying a siege ring around the valley; serve as a link-up base for French-led special operations teams operating in Northern Vietnam; fortify the defensive positions; and hold Dien Bien Phu "at all costs."

Although Colonel de Castries obeyed this directive to the letter, with half of the combat units out on patrolling operations in the jungle and without construction materials, the defensive fortifications were soon little more than rain-soaked foxholes. General Giap now saw the chance to decisively engage the French on his own terms. Knowing that Dien Bien Phu was too far away from other French positions for quick reinforcement or supply, he moved three infantry divisions and one artillery division to northern Vietnam.

Meanwhile, French combat losses from actions around Dien Bien Phu had amounted to one full infantry battalion and enough officers and NCOs to staff two more battalions. Although this enemy contact meant that the Viet Minh were coming closer and in greater numbers around the valley, the French remained confident. On 31 January 1954 the airstrip came under enemy howitzer fire for the first time, and pilots identified the first communist antiaircraft positions a few days later. By 17 February Dien Bien Phu was ordered to limit its offensive operations to "light reconnaissance raids." Thus, one of the initial justifications for garrisoning the area—to provide a base for large offensive attacks in the enemy's rear—had been canceled after only three months. French intelligence and aerial reconnaissance confirmed that five enemy divisions surrounded the garrison.

By early March General Giap was ready to attack. Almost 50,000 of his best soldiers surrounded the garrison, and artillery pieces dug into the hillsides looked directly down into the French positions. The airstrip was now under constant bombardment. On 14 March the Viet Minh captured

Fortifying the positions to withstand 105mm howitzer bombardments would require 36,000 tons of construction material, and the only way to bring it in was by aircraft. Unfortunately, the French had neither the time nor the aircraft to fly in anywhere near this amount.

strongpoint Beatrice, one of the two highest French positions that prevented direct fire onto the runway. Although three French Bearcat fighter bombers managed to take off, enemy artillery destroyed the nine remaining aircraft. Dien Bien Phu lost all of its local air support after only two major days of battle.

Despite enemy antiaircraft fire, a Vietnamese paratroop battalion jumped in to reinforce the garrison. Throughout the battle, the French parachuted in more than 4,000 reinforce-

ments. Some of these personnel had never parachuted before, and some arrived only two days before the garrison's capture. Strongpoint Gabrielle fell on 15 March. French casualties up to this point totaled 1,000 wounded or killed in action, while the Viet Minh had lost an estimated 3,000 to 4,000.

The French commander realized the desperate situation the garrison faced. General Cogny sent General Navarre a secret message saying that a "disaster" at Dien Bien Phu was a distinct probability and requesting that Navarre stop other French operations in Indochina so that Dien Bien Phu could be reinforced. Navarre refused, still believing that Dien Bien Phu was too strong for the Viet Minh to defeat. The senior commander in Indochina, he naively believed that the French Air Force and artillery were strong enough to blunt any communist attacks and that the rugged terrain would prevent the enemy from moving in large amounts of heavy artillery.

At Dien Bien Phu, ammunition stocks, especially artillery shells, dropped to low levels. The Viet Minh moved 37mm

the Viet Minh seized strongpoint Huguette and half of the airstrip. On 24 April the main French position had 2,900 exhausted infantrymen left, and strongpoint Isabelle had only 1,400, while General Giap still had 35,000 fresh and rested infantry troops at his disposal.

On 1 May 1954 Giap's final assault began. At 1700 hours on 7 May, Colonel de Castries ordered his forces to cease fire, and strongpoint Isabelle surrendered at 1900 hours. One day after the fall of Dien Bien Phu, the French government sued for peace in Indochina.

There were three major reasons for the Viet Minh success during the attack on Dien Bien Phu: One of these was their overwhelming numerical superiority, which enabled them to concentrate forces while the French were dispersed throughout Vietnam. The French objective of controlling territory caused them to garrison small outposts throughout the country and prevented the massing of French forces.

When the Viet Minh encircled the large French airbase at Seno in the Fall of 1953, General Navarre quickly reinforced Seno with reserves from the Red River Delta region. Giap infiltrated several regiments into southern Vietnam and attacked, causing the French to rush more troops to these newly contested areas. He sent the 316th Division of the Vietnam People's Army to the politically important Laotian capital city of Luang Prabang, forcing the French to airlift five more battalions for its defense. These actions had set the stage for the final scattering of French forces throughout Indochina. General Giap caused the French to disperse precious reserve units in pursuit of the elusive "single-battle decision."

When the battle for Dien Bien Phu began on 13 March, the Viet Minh could amass 49,500 assault troops and 31,500 support troops while the French garrison had only 13,200 men, of which only 7,000 were front-line combatants. The Viet Minh's seven-to-one ratio in strength grew as the battle progressed: The French could not fly in reinforcements to replace their casualties, while the Viet Minh had thousands of fresh troops coming from training bases in China and northern Vietnam to replace their own casualties. In addition, communist propaganda announcements four days into the battle caused almost the entire 2d and 3d T'ai Light Battalions to desert from the garrison, thus robbing the French of one-fifth of their combat power.

The second reason for the Viet Minh victory was their overwhelming advantage in artillery and its employment. General Navarre thought French air and counter-battery fire would destroy what few guns the Viet Minh could haul into the mountains, but this estimate was based on the artillery strength of a Viet Minh attack two years earlier. Since that time, the Korean War had ended, and the Chinese had significantly equipped and trained the Viet Minh artillery units.

French intelligence estimated that the Viet Minh had 40 to 60 medium howitzers, but Giap actually assembled 240 howitzers capable of firing 350,000 rounds in a sustained bombardment. The French had only 24 105mm and four 155mm howitzers and an assortment of mortars. None of the French

The failure of the French to occupy and fortify this key terrain later proved disastrous.

antiaircraft guns onto the old French positions of Beatrice and Gabrielle and were able to fire directly into the landing and take-off patterns of resupply planes. Colonel de Castries became indecisive, and Lieutenant Colonel Pierre Langlais, one of the aggressive parachute battalion commanders, assumed *de facto* command. De Castries did not resist his ouster and spent the remainder of the battle in his bunker.

At the end of March 1954, the second phase of the battle began. General Giap switched from human-wave assaults to siege tactics and ordered thousands of workers to dig elaborate trench systems around the French garrison. Isabelle was sealed off from the main defensive positions. Giap's objective was to encircle the center positions and to place his anti-aircraft guns closer to the French supply drop zones at the south end of the airstrip. Giap had numerous copies of French maps and aerial photos that French pilots had attempted to drop to the defenders but that had fallen into Viet Minh lines. These maps showed the complete layout of the French positions, including artillery and heavy weapon positions.

French aircraft increased their drop altitudes to 8,500 feet because of heavy enemy flak, and still more French supply bundles fell into enemy hands. French casualties mounted, and the flooded, underground hospital filled to capacity. Because of the enemy fire covering the airstrip, casualties could not be flown out, reinforcements could not be flown in, and shrinking drop zone areas limited airborne drops. As a result, critical shortages developed in ammunition, medical supplies, and food.

At the end of April, after one month of constant fighting,

artillery positions were adequately fortified, and the Viet Minh occupying the high ground around the valley could see exactly where each French gun position was.

Thousands of workers dismantled the Viet Minh guns, pulled them up the mountain sides, dug the guns in on the slopes directly facing the French, and then masterfully camouflaged the emplacements. Jungle foliage hid the muzzle flashes and dispersed smoke from the propellant. French fighter-bombers could not spot the gun emplacements, and heavy antiaircraft fire prevented low level observation flying. The rainy season neutralized French napalm, as the wet leaves would not burn.

By 31 March the French lost three 105mm and two 155mm howitzers, 18 120mm mortars, and most of their trained artillery gun crews. By 6 May the French had only eight assorted artillery pieces functioning. The limited French artillery forces could not even provide mutual support within the garrison area. The battalion of 105mm howitzers to the south, at strongpoint Isabelle, were more than seven kilometers away from the main fortress and beyond the range at which they might support the key northern strongpoints. The French artillery commander realized his serious mistakes in positioning his forces and committed suicide early in the battle.

Since 1 February Viet Minh direct artillery fire on the airstrip had rendered Dien Bien Phu's major method of resupply both useless and risky. Viet Minh antiaircraft fire during the battle shot down 48 French planes, destroyed 14 on the ground, and damaged another 167. The final testament to Viet Minh artillery was that 75 percent of the French casualties (more than 8,000 in all) resulted from enemy indirect fire.

The third and greatest reason for the French defeat was their inability to resupply the garrison. Dien Bien Phu was too far from other French forces for any ground reinforcement, and the French Air Force could not interdict Viet Minh supply routes or parachute enough supplies or personnel into the garrison. French air units did not have the number or type of heavy bombers they needed to interdict Viet Minh supply routes. The Viet Minh had a 500-mile logistics trail from the Chinese border, and they used 20,000 workers to hack roads through the jungle over a three-month period. Monsoon weather did not stop communist porters carrying supplies on the ground, but it greatly hindered French fighters and transport aircraft. Laborers and Russian-made two-and-one-half-ton trucks brought 8,286 tons of supplies into the valley, while the more modern French were able to fly in only 6,600 tons.

The 36,000 tons of construction materials for proper defensive positions would have required 12,000 C-47 sorties, which would have taken five months. The lack of construction materials resulted in poor defensive positions that collapsed easily under the water-logged earth and Viet Minh artillery fire. Once the battle began, accurate and intense Viet Minh antiaircraft fire forced French transports to parachute

their loads from higher altitudes. Of the 103,000 artillery shells parachuted in, 12,000 landed in Viet Minh hands and were used against the French. From the first day of battle, Dien Bien Phu was short of ammunition. Not only did this shortage prevent French artillery from destroying more enemy troops, it postponed crucial French counterattacks for lack of proper fire support.

The French logistical system was unable to provide replacements to the garrison. By mid-April, General Giap assembled 35,000 infantry troops and 12,000 artillerymen, while Colonel de Castries had fewer than 5,000 combatants. The Viet Minh removed their casualties and immediately brought up replacements, while French had 1,200 seriously wounded men they could not evacuate. Lack of military supplies, poor logistical planning, and too few replacements doomed the French garrison.

Although the 16,300 men lost at Dien Bien Phu represented only four percent of French military strength in Indochina, this was a decisive loss. Only a month after the garrison fell,

Seventy-five percent of the French casualties (more than 8,000 in all) resulted from enemy indirect fire.

the French withdrew all their forces into the Hanoi-Haiphong area, and on 21 July 1954 hostilities officially ended.

There was much finger-pointing within the French military as to who "lost" Dien Bien Phu. The key points brought up by a French investigative commission were: the underestimation of Viet Minh artillery and supply capabilities, the overestimation of French Air Force capabilities to neutralize enemy artillery and interdict supply lines, and the French commanders' overconfidence in the fighting ability of their forces.

General Giap wrote after the battle, *The French Expeditionary Corps was strategically surprised because it did not believe that we would attack—and we attacked; and it was tactically surprised because we had succeeded in solving the problems of concentrating our troops, our artillery, and our supplies.* In this statement, Giap briefly summed up the major reasons why his own guerrilla force was able to defeat the French Colonial Army force at Dien Bien Phu.

Captain James R. Nagel commanded an infantry company in the 2d Battalion, 60th Infantry, 9th Infantry Division, and served on the staff of the 199th Infantry Brigade (Motorized). He previously served in the 2d Battalion, 27th Infantry, 7th Infantry Division. He is a 1984 graduate of the United States Military Academy and recently completed a master's degree at Arizona State University. He is now assigned to Aberdeen Proving Grounds in Maryland.

FIFTY YEARS AGO IN WORLD WAR II SEPTEMBER-OCTOBER 1944

The futility of the Axis powers' ambitions was clear by the autumn of 1944; staggering reverses in the Pacific, across France and the Low Countries, in Italy, in Eastern Europe, and in the Balkans revealed the hopelessness of their aggression. In early September, planning was under way for the liberation of the Philippines, the Marianas had been regained, and irreplaceable Japanese losses on Peleliu, at Morotai, and in the naval action in the Surigao Strait severely taxed Japan's limited reserves in men and materiel. Driving out of their Normandy beachhead, Allied forces had swept across France, into Belgium, Luxembourg, and Holland, and were closing on Germany itself. The capture of Aachen dealt Germany a blow that was as damaging psychologically as were the losses in men and equipment. Massive Soviet armies were mounting offensives on a scale not seen since the German invasion of Russia; the First Baltic Front advanced to the Baltic coast of Lithuania, while the Second Ukrainian Front fought its way into Hungary and the Karelian Front pushed across Finland to Norway. Battered on every side, the Axis alliance soon began to crumble.

These and other highlights of World War II are drawn from Bud Hannings' *A Portrait of the Stars and Stripes, Volume II*, available for \$50.00 from Seniram Publishing, Inc., P.O. Box 432, Glenside, PA 19038.

- 3 September *The 3d Armored Division seizes the city of Mons, Belgium, leaving the VII U.S. Corps in position to intercept the German 7th and 15th Armies in the Mons pocket.*
- 4 September *The Finns and Russians agree to a truce, abandoning the Germans fighting on that front.*
- 10 September *Operation MARKET GARDEN kicks off with the massive Allied airlift of three airborne divisions and a corps-sized armor thrust. Hampered by the unexpected presence of two Panzer divisions, the operation creates a salient into the German line, but fails to attain all of its objectives.*
- 21 September *MARKET GARDEN ends with the surrender of the remaining soldiers of the British 1st Airborne Division at Arnhem, after stiff German resistance prevents British armor from reaching Arnhem in time.*
- 30 September *In the Pacific, Admiral George H. Fort declares Peleliu, Ngesebus, Kongauru, and Angaur occupied. Organized resistance on Northern Peleliu has stopped.*
- 7 October *After the Vagney stronghold is secured by soldiers of the 3d Infantry Division, a counterattack penetrates American lines. A tank commanded by Second Lieutenant James Harris attempts to repel the Germans. As the Germans pull back to set an ambush, Harris moves forward on foot to find them, is wounded in a burst of machinegun fire, and crawls back to his tank. Although too seriously wounded to get back inside, he issues commands from outside the tank until it is destroyed. He is hit by a shell that removes his left leg at the hip. Refusing medical attention until another man is treated, he dies of his wounds and is posthumously awarded the Medal of Honor.*
- 9 October *Lieutenant General Mark Clark, U.S. Fifth Army commander, is panicked over the dwindling strength of his divisions. Replacements have been diverted to France.*
- 17 October *In a prelude to the Philippine Islands campaign, General Douglas MacArthur lands the 6th Ranger Battalion to seize Dinagat, Homonhon, and the Suluan Islands.*
- 20 October *MacArthur's forces invade the Philippines aided by a massive air support umbrella and overwhelming naval superiority.*

TRAINING NOTES



Effective Fire Support at the JRTC

LIEUTENANT COLONEL BRUCE A. BRANT

During many of the missions a battalion commander might encounter at the Joint Readiness Training Center (JRTC), the key to victory is the effective use of fire support. Fire support assets must be properly arranged on the battlefield—in time, space, and priority—to be synchronized with the other combat functions and to produce the maximum effects at the decisive point of the engagement.

As the fire support observer-controller at the JRTC, I would like to offer commanders and their staffs some tactics, techniques, and procedures for the successful use of fire support, whether during deployment at the JRTC or on an actual contingency mission.

Several positive trends in fire support at the JRTC clearly demonstrate a higher level of awareness and training among commanders and their staffs in the integration of joint assets, the use of mortars, and technical gunnery.

Air liaison officers (ALOs) and personnel of the Marine Corps air and naval gunfire liaison company (ANGLICO) are now more quickly assimilated into brigade and battalion staffs. These personnel are made part of the planning process, and air and naval gunfire requests are tied to the maneuver plan

early enough to ensure that air tasking orders are correct and support ships are within range. Often, Marine Corps fire-power control teams are infiltrated with unit scouts for early integration of the task force's fire support.

Mortars are now being used for more than 40 percent of all indirect fire mis-

Fire support assets must be properly arranged on the battlefield—in time, space, and priority—to be synchronized with the other combat functions and to produce the maximum effects at the decisive point of the engagement.

sions, twice as many as in the past few years. Company commanders know they will always have priority of fires for their own mortars; fires can be cleared rapidly and adjusted close to friendly troops.

Field artillery battalions now support task forces in many ways other than fire support. It is common to see battalion survey sections placing declination stations for mortar aiming circles and M-2

compasses near landing zones and drop zones. They also survey engineer obstacles to ensure that the target list grids are correct. Fire support officers rapidly gain permission and targets on which to register mortars, and battalion fire direction centers now send meteorological data to the battalion mortars. All of these techniques help provide more accurate indirect fires.

Despite these positive trends, however, the following areas still need emphasis:

Acquiring targets. Units are often unable to find their targets, sometimes because the enemy is on the move and mortars or artillery have not been following the maneuver unit with the priority targets. In the defense, fires usually fall behind the fast-moving enemy because no trigger points have been established before an engagement area. Often, during an attack, the objective has not been accurately located, and the unit does not find the objective until it has already closed with the enemy and cannot use its firepower advantage.

Tracking the battle. Before fires can be cleared in an area, the positions of all friendly units and civilians must be known. All task force elements must send frequent spot reports to the battle

captains, and these locations must be relayed to all units that may be affected.

Integrating fire and maneuver.

Fires are wasted if they are not on target when and where the maneuver units need them. Fires can easily be initiated on a grid at a specified time; the problem arises when there are no accurate target coordinates or when fires are initiated on the grid but the maneuver unit is not there. Too often, indirect fire assets are used on templated grids prepared by the S-2 and not confirmed by the reconnaissance and surveillance (R&S) plan. Basically, rounds are fired at the S-2's best guess. If enemy locations have not been confirmed, observers must adjust fires onto the objective before the assault. A maneuver unit that is not in an attack position when fires are about to be delivered must cancel the fires and wait until it is in the best position to take advantage of them. If the objective is not where it has been predicted, the unit must delay the attack until an observer has adjusted onto the target.

Integrating intelligence. The S-2 must be properly integrated into the targeting process. Daily targeting meetings are usually held in brigade and battalion tactical operations centers (TOCs), but they are not as productive as they should be because intelligence officers are not specific about the locations of the targets the commanders want to eliminate. Sometimes the intelligence officer does not even go to the meetings, and he is the one who must tie the R&S plan with targeting.

Fire Support Guidance

Fire support guidance is the most important contribution a commander makes to his fire support effort. This guidance, formerly known as the commander's intent for fire support, is a description of what the commander wants his fire support to accomplish. It must be specific and detailed, because it sets in motion resource planning, unit movements, intelligence gathering, and all the other tasks that must be completed before an operation begins. If the guidance is poor, fire support will not be used to its best advantage, or it will not



Mortars are now being used for more than 40 percent of indirect fire missions, as commanders rediscover their own organic assets.

be properly integrated with the scheme of maneuver.

The commander's fire support guidance should accomplish the following goals:

- Establish what the commander wants each of his fire support assets, including mortars, to accomplish during each phase of his mission. The guidance should state how fire support will influence the battle and support his scheme of maneuver. The commander links the support to phases, events, or terrain, and this information becomes the basis of the fire support execution matrix.

- Tell what his targeting priorities are and the effects (*suppress*, *neutralize*, or *destroy*) that he wants to achieve on the targets. The commander may want to specify the effects during the targeting meeting, keeping in mind that, to a fire supporter, *destroy* or *neutralize* may trigger a massive logistic requirement. Also, *suppression* is linked to time, and the commander must state when he wants suppression and for how long.

- State his force protection priorities. These priorities determine locations for counterfire search sectors, radar zones, final protective fires (FPFs), and other priorities he may designate.

- Discuss the use of such special munitions as FASCAM (family of scatterable mines), Copperhead, smoke, DPICM (dual-purpose improved con-

ventional munitions), and restrictions (no-fire areas, restricted fire lines).

- State times and places in the battle where fire support is critical.

- Discuss any other major concerns such as fratricide prevention, control measures, contingency plans, and subsequent operations.

In the Offense

In the attack, a commander and his staff should accomplish the following:

- Link the priority target list to the decision support template, and change priority targets as the force advances.

- Develop a fire support plan for the scouts. The scouts may need attached forward observers if the commander wants harassing fires on the objective. When conducting harassing fires to interdict enemy engineering efforts, observers should use indirect fires and then leave the area so the enemy counter-reconnaissance force will not find them. Their main objective should be to obtain a good grid location for each target for preparation fires.

- Use timely deception fires.

- Fire smoke to screen movement, obscure combat outposts, and aid breaching operations. Units should use as much smoke as possible, even at night.

- Dispatch observers, with security, to adjust fires with non-lethal munitions

if the scouts have not pinpointed the objective for preparation fires and the terrain restricts observation. The observers can then adjust onto the target and move to the minimum safe range before calling for high explosive rounds in effect.

- Use smoke to isolate the parts of the objective not being directly assaulted. This is an excellent mission for 81mm mortars.

- Mass as much indirect fire as possible on the portion of the objective to be assaulted and, if the fires are not on the objective, have the fire support officer (FSO) adjust them. It takes a lot of rounds to destroy troops who have overhead cover. A more realistic mission is to keep the enemy suppressed until the breach is made.

- Echelon fire support assets. Fire artillery until troops are at the minimum safe distance, and then use mortars. If tanks are leading, 60mm mortar rounds can almost lead them through the breach.

- Before the attack, give the company FSO an idea of where to place FPF. As soon as an observer is through the breach, he should start adjusting his FPF to make sure it is ready before a counterattack. If FASCAM is authorized, the task force plan should show where and when to emplace it before the attack. Then the minefield must be kept under observation after it is emplaced. FASCAM is normally used to stop a counterattack force or to block a route into an objective area.

How long should preparation fire continue? The answer should be in the commander's fire support guidance and should be linked to an event, not to a time. The criteria of *destroy*, *neutralize*, or *suppress* should be linked to the intelligence preparation of the battlefield template. But indirect fire support to neutralize or destroy an objective may not be practical, especially in a contingency operation where limited ammunition and few heavy assets are available. The length of the preparation is determined by the time it takes to meet the commander's criteria. A 105mm battalion could fire for 30 minutes against

troops with overhead cover and armor support and still not meet an attack criterion, but suppressive fires and smoke can be effective. The length of the preparation for suppressive fires should equal the time it takes to move from the attack positions to the minimum safe distance line; then smoke can be fired and suppressive fires shifted to other parts of the objective.

In the Defense

Contingency operations usually restrict the types and amounts of fire support weapons and ammunition in theater. Planning for a defense must therefore consider these limitations:

- Because of restricted ammunition resupply rates, trying to hit moving armored vehicles, or a few rapidly moving dismounted reconnaissance elements, may not be the best use of these limited assets.

- Any 155mm units that may be in theater should be used in the counterfire battle. The commander may have to choose between Copperhead and a FASCAM minefield in fighting armor. In close terrain such as that at the JRTC, a combat observation lasing team (COLT) may never find terrain that is open enough for a good Copperhead shot. Although aviation can also use lasers, the brigade fire support coordinator (FSCoord) may not have the positioning authority to move the 155mm units to a location that supports the proper firing angle.

- Each battle position must keep enough ammunition for successful final protective fires.

Fires can be massed on high payoff targets and on dismounted soldiers stalled at obstacles. Each obstacle needs someone watching it—usually a forward observer, an engineer, or an infantryman. The final obstacle placement grid should be determined by global positioning system (GPS) or survey, and the task force target list updated. Each observer should be given a 3x5 index card showing the call sign, frequency, nearest target number, direction to the target in mils, and instructions on how to shift fire onto the obstacle. The compa-

ny FSO should execute this mission for every obstacle in his area.

In restrictive terrain, it is difficult to use trigger points for indirect fires, because vehicles do not keep a steady pace and observation is limited. But trigger points can give effective early warning to fire smoke in front of vehicles and cause them to slow down even more. The observer can then call for indirect fires to strip away the dismounts, making the vehicles more vulnerable to direct fire weapons.

A FASCAM minefield can be very effective in turning an enemy force, but if it is not tied into other obstacles the enemy will hit it and turn in a direction that may be away from the engagement area. To keep its momentum, the opposing force usually tries to go around an obstacle. The best way to use FASCAM is to put in two or more turning obstacles with a 400-meter opening between them. Reconnaissance forces will spot the opening and direct their forces to it. After the reconnaissance element has gone by, the FASCAM is fired; the main body hits the minefield and turns in the direction of least resistance, which is determined by the placement of the other obstacles.

FASCAM must be planned well ahead of time, and the brigade FSO must compute a safety box. It usually takes about 20 minutes for a battery to fire the minefield. Once it is in, an observer needs to move through the safety area so he can call for fire against any enemy forces that are caught in the minefield or stalled in front of it. An observer from the COLT is effective in this job, because he can rapidly move into the area after the minefield is fired and observe during periods of limited visibility.

The most effective use of fire support in the defense is through the use of a joint air attack team (JAAT). Armored vehicles caught in open areas or roads can be destroyed if the team is well coordinated between close air support, Army aviation, the brigade engineer, signal jammers, and artillery suppression of enemy air defenses and FASCAM fires. This mission should be

planned at brigade level, not handed to the aviation or maneuver task forces. Success requires detailed planning, rehearsals, and redundant communications.

The most difficult environment for a fire supporter is probably that found in operations other than war. On a non-linear battlefield—with non-governmental agencies, civilians, and restrictive rules of engagement—clearing fires is more difficult and time-consuming. Fire support guidance for such operations should therefore be considered:

- The rules of engagement (ROEs) must be clearly understood. They may prohibit unobserved fires, for example, but it may not be clear whether this includes radar or non-lethal munitions.

- Fire support cannot be used indiscriminately. Harassing fires (formerly called harassing and interdicting fires), as used in Vietnam, could serve only to diminish popular support among the civilians.

- The use of improved conventional munitions, or other high dud-producing munitions, should be restricted.

- Close coordination with the host nation's units, multinational forces, and non-governmental agencies is necessary—if possible, using a communications link and a liaison officer.

- Civilians must be closely monitored. The psychological operations and civil affairs (PSYOP/CA) staff can be used to establish a dusk-to-dawn curfew and to warn the populace that hostile acts may bring retaliation with indirect fires. Restrictive-fire areas should be used around towns and no-fire areas around shrines and other treasured landmarks.

- The accuracy of indirect fire systems—always important in limiting collateral damage and fratricide—is critical in OOTW because of the ROEs, the need for popular support, the closeness of terrain, political concerns, and the proximity of fires to friendly troops. If the FSCOORD advises, mortars and artillery pieces should be registered. It may be necessary to coordinate with the host government for areas to register. A unit in a buffer zone during a peace enforcement operation will find it better to register into areas of both belliger-

ents; this gives data in both directions, treats both parties equally, and is an excellent show of force.

During search and attack operations, units usually maneuver as squads or platoons, and this presents another fire support challenge. The company commander has at least two mortar sections, three platoon forward observer teams, the FSO, and the FSNCO. If his search area has not been given additional assets, he must decide which of his elements will have priority.

One option is to assign a mortar section to move with the element that has priority of fires; if these two elements come into contact with the enemy, however, the mortar section may have to move to get adequate overhead clearance. Another option is to place both mortars with the company command post and have each one lay on a priority target. Observers should be given to the elements most likely to be in contact. The company commander and FSO develop a fire plan for the element with priority of fires. Priority targets are placed along the route. The element leader conducts a reconnaissance by fire when he comes close to the target. When he passes the target, he cancels it and has the mortar section lay on the next priority target. When the unit comes into contact, it fires the priority target, then adjusts the fires to isolate, fix, and finish the enemy force, or to set the conditions to maneuver against it.

Using Mortars

Whenever possible, commanders should use their mortars first, because in most situations they can be cleared and fired faster than other fire support assets. When deploying, commanders should consider the following:

- Register as soon as possible in every position.

- Anticipate ammunition requirements. Local unit ammunition caches may have to be established to aid distribution.

- Echelon mortars with the other fire support assets in the attack.

- Make sure the mortar section understands the commander's guidance for fire support. Include the mortar

crews in briefbacks, rehearsals, and communication exercises, and give them a fire support matrix.

- Mortars need to deploy with all their section equipment including mortar ballistic computer, plotting boards, and base plates.

- When mortars arrive in theater, the sections must declinate aiming circles and M-2 compasses. The field artillery battalion can provide a declination constant in the fire support plan before deployment and a declination station close to the forward landing strip or drop zone.

- The FSO must coordinate for survey and meteorological data.

To get the most from their indirect assets, brigade and battalion task forces need to provide several areas of support:

From platoon leader to brigade commander, the relationship with the FSO decides the effectiveness of indirect fires. Synchronization suffers if the FSO is not in the planning process, rehearsals, communications exercises, or part of the team. In most contingency operations the fire support elements are attached to maneuver units. Replacements and supplies are requisitioned for them just as they are for the assigned maneuver forces.

Where should the FSO be located? The brigade FSCOORD is the direct support field artillery battalion commander, and he chooses a location from which the FSO can best execute the brigade commander's fire support guidance, usually the brigade TOC. Task force and company FSOs must be able to execute changes to guidance, which means they should be close to the commander but still have excellent communications and the ability to track the battle. Forward observers, and at times FSOs, have to be in a position to observe fires and execute the plan, which means they may need to separate from their commanders.

Task force TOCs need to be large enough to house the ALO and ANGLICO personnel so they can be part of the planning process and track the battle effectively.

During operations other than war, when there is no air or major artillery

threat, the firing batteries need engineer assets to build fire bases. The main threats to the batteries and radar are ground attacks, mortars, ambushes, mines, and snipers. Given a bulldozer operator and a small emplacement excavator for eight to 12 hours, a battery should be able to dig itself in.

Holding targeting meetings at brigade and battalion ensures the linkage of the commander's intent, intelligence assets, the assault force, and damage assessment elements to evaluate the results of delivered fires. Targeting meetings

must be held to ensure that the available intelligence assets are used properly and are focused on the commander's priorities.

Fire supporters must participate in rehearsals. FSOs and mortarmen should brief along with their commanders so that fires can be integrated with the maneuver plan at the right place and time.

The mission of fire supporters is to synchronize and execute indirect fires to meet the combined arms commander's guidance for fire support. The realistic

training at the JRTC prepares a commander to deploy anywhere in the world and accomplish his mission knowing that his indirect fire capability greatly increases his unit's lethality and his ability to protect the force.

Lieutenant Colonel Bruce A. Brant, a Field Artillery officer, is senior fire support observer-controller at the JRTC. He previously commanded the 1st Battalion, 319th Airborne Field Artillery, 82d Airborne Division, and served as S-3, 25th Infantry Division Artillery. He is a 1973 ROTC graduate of Texas A&M University.

The TOW Master Gunner Course

STAFF SERGEANT ANTHONY J. PETRONE

In response to the Infantry School's TOW Accuracy Study, some changes have been made in the way the School trains TOW crews. Many improvements have been incorporated into the training conducted at Fort Benning and at unit level.

The old TOW Leader Course, which trained both officers and noncommissioned officers (NCOs), has been replaced by two separate courses: The two-week TOW Platoon Leader Course teaches the basic technical and tactical skills to officers, and the four-week TOW Master Gunner Course teaches advanced technical skills and training management to experienced, MOS-qualified NCOs.

The TOW Master Gunner Course is now the Army's only formal program of instruction for NCOs in MOSs 11H and 19D on the advanced technical aspects of the TOW and related equipment. Its purpose is to train these selected NCOs on advanced TOW gunnery, planning and implementing gunnery training, advanced training management, sec-

ondary weapons, TOW system and carrier maintenance, and all related training devices.

Unlike the old course, this one does not include instruction on Skill Level 1 tasks. Commanders must certify that NCOs reporting for the course have passed the Gunner Skill Test (score of at least 70 percent), in accordance with Field Manual (FM) 23-34, *TOW Weapon System* (on either the M901 improved TOW vehicle, or the M966 HMMWV—high-mobility multipurpose wheeled vehicle). This certification (in memorandum form) must accompany the NCOs to the course. In addition, each student takes the test again during the first two days of the course and must pass it or be returned to his unit.

Commanders should select only highly motivated and proficient NCOs to attend the course and make sure they meet all the prerequisites. The course is open to those in the ranks of sergeant (promotable) through platoon sergeant and in MOSs 11H or 19D, Active Army, Army National Guard, or Army

Reserve. They must be graduates of the Basic NCO Course and have Secret clearances and their commanders' recommendations.

The TOW Master Gunner Course is designed to be tough. A student must receive a "GO" on all performance-oriented tests and 90 percent on all written examinations. The four-week course includes 214.5 hours of instruction, consisting of the following topics:

- Advanced training management.
- TOW weapon system maintenance.
- Vehicle maintenance.
- TOW missile family.
- MILES (multiple-integrated laser engagement system) operations.
- TOW Gunnery Trainer.
- Combat vehicle identification and fratricide prevention.
- TOW gunnery tables.
- TOW Field Tactical Trainer (TFTT).
- Conduct of a TOW live fire.
- Secondary weapon systems.
- Zeroing machineguns (live fire).
- TOW strategy.

- HMMWV interchangeable mount system (HIMS).

Upon graduation from the course, each student is awarded the new additional skill identifier (ASI) of S1, indicating a TOW Master Gunner.

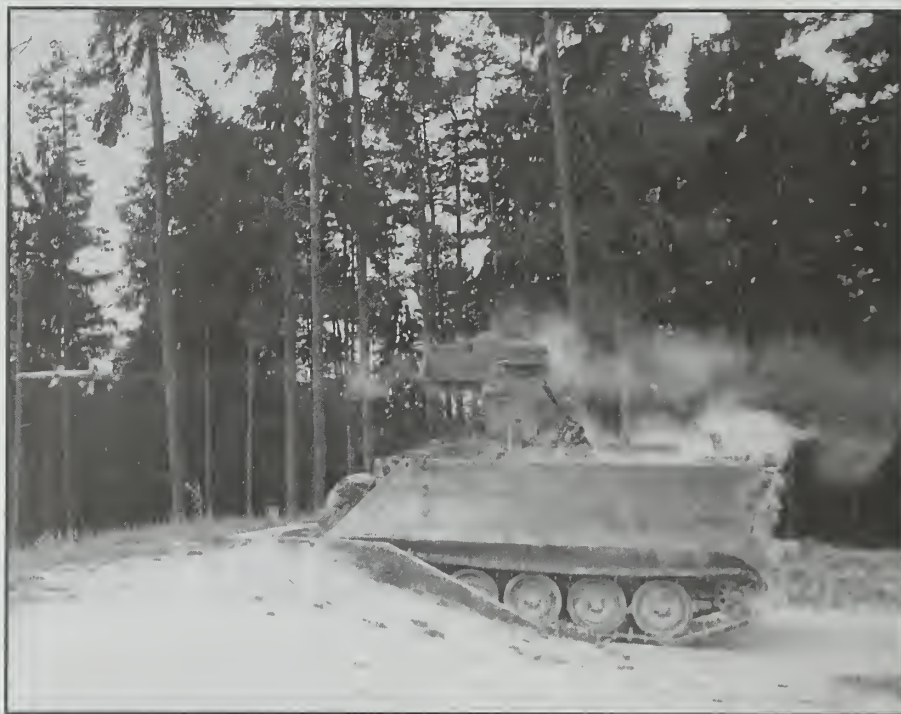
Commanders should make every effort to ensure that only their best-qualified NCOs are sent to Fort Benning to undergo this important training. Several areas have proved difficult for students:

Training Management. Student must understand and apply a vast amount of information from FMs 25-100 and 25-101 that will enable them to prepare and design training plans for their antiarmor units. These NCOs must also prepare a training briefing and complete a training plan, including a quarterly gunnery exercise using the TOW tables outlined in FM 23-34. It is a good idea for them to read these manuals before attending the course.

Secondary Weapon Systems. Students must become proficient in the functioning, maintenance, and zeroing of various secondary weapons—the MK19, M60 machinegun, .50 caliber machinegun, and M249 machinegun—which are being used more often in light infantry TOW units. They must pass a hands-on performance test on these weapons as well as a written test.

Combat Vehicle Identification. Students are given a detailed class on armor threat and the causes and prevention of fratricide. To pass the course, students must identify 36 out of 40 vehicles by nomenclature. They will find the test easier if they have read FM 1-402, *Aviator's Recognition Manual*, and studied Graphic Training Aid (GTA) 17-2-13, *Armored Vehicle Recognition*, before attending the course.

TOW Gunnery. Many units are unfamiliar with the new standards and the techniques that are needed to run the TOW gunnery tables in FM 23-34. TOW master gunner students learn how the various tables are to be set up and conducted, on the basis of their units' resources. TOW Tables 1 through 12 are taught so that each master gunner can resource, set up, and operate an effective gunnery program for his unit. This train-



The TOW missile is a mainstay of the U.S. Army's antitank inventory, and hence is to be found with U.S. units around the world. Here, the missile is fired from an Improved TOW Vehicle (ITV) of the U.S. 1st Armored Division, in Germany.

ing will improve the skills of individual gunners as well as their squads, sections, and platoons.

TOW Field Tactical Trainer (TFTT). Students learn how to set up, operate, and maintain the TFTT and how to use it to conduct the new gunnery tables. Training on the TFTT is more realistic than on the old M-70 trainer.

MILES. Because of the extensive use of MILES equipment, NCOs must become expert in its use. Too often, its improper use results in unrealistic training. Students in the course are taught how to install, operate, maintain, and troubleshoot the TOW weapon system MILES and the TOW vehicle MILES.

TOW Missile Family. The course gives students a better understanding of the internal functions of the missile and the weapon system. They receive instruction on the missile marking system and on the complete family of TOW missiles and their selection priority for engaging targets.

It is important that commanders select for the course only the students who will use this training to improve their profes-

sional knowledge and to contribute to the antiarmor unit's training effectiveness and combat readiness. It is best to send soldiers who are in leadership positions and who have retainability within the unit.

Commanders and trainers who would like more information about the course itself are encouraged to write to Commandant, U.S. Army Infantry School, ATTN: Company B, 2d Battalion, 29th Infantry, Fort Benning, GA 31905-5595; or call DSN 784-6796 or commercial (706) 544-6796.

The TOW Master Gunner Course gives antiarmor leaders the technical knowledge they need to supervise, access, and develop an aggressive training plan for an antiarmor company or platoon. There should be no doubt that a TOW Master Gunner will be a great asset to his unit or any such unit to which he may be assigned in the future.

Staff Sergeant Anthony J. Petrone is an instructor in the TOW Master Gunner and TOW Platoon Leader Courses. He was previously a platoon sergeant in the 2d Battalion, 18th Infantry, 24th Infantry Division, and a TOW squad and section leader in the 3d Infantry Division.

Support by Fire

The Key to the Light Infantry Attack

CAPTAIN FRED JOHNSON

The overwatch and support by fire (SBF) mission is critical to a successful attack. When it is executed to standard, the support element destroys enemy personnel, bunkers, and vehicles; keeps the enemy from repositioning; and, above all, prevents the enemy from killing friendly personnel in the assault force. Unfortunately, operations orders rarely address support by fire in adequate detail, and it is seldom mentioned in unit standing operating procedures (SOPs).

The purpose of an SBF element is to allow the assault element, usually the main effort, to accomplish its mission. The element prevents the enemy from effectively engaging the assault force as it closes on the objective. Significant actions in suppressing an objective are ensuring that key weapons and personnel are in the SBF position, identifying targets and distributing fires, controlling rates of fire, and maintaining communications and observation with the assault force.

Leaders planning for SBF must first consider the composition of the enemy force and the capabilities of friendly weapons. This information will determine the types of weapons and the way they will be used. If the enemy is dug in with bunkers, AT4 and M72 light antiarmor weapons should be employed. If the enemy is operating in a trench line, indirect fires should be planned with variable time fuzes for airbursts, and plunging fire for the M60 machineguns should be considered.

If the enemy has armor, the leader

should plan to use Dragon medium antiarmor weapons. For a platoon attack, the platoon leader may task organize his M203 grenade launchers into a section of three or four men under the control of a team leader to mass the effects of the 40mm rounds. This is also a good technique for controlling M203 illumination during a night attack.

For an SBF mission, all available assets must be massed at the critical time and place. This includes not only



organic machineguns and antiarmor weapons but also indirect fire, close air support (CAS), and attack helicopters. The soldier who is trained and has the communications to control these assets is the forward observer (FO), and leaders should consider placing him in the SBF position where he can best observe the fires. The FO is usually with the platoon leader conducting individual movement techniques on the objective and not in a position to observe the enemy.

The 60mm mortar, the company com-

mander's most responsive indirect fire asset, should also be included in SBF planning. The 60mm is most effective when the direct lay method of fire is used, because corrections can be made more quickly than in the indirect mode, and the fires are usually more accurate. The SBF position offers the required observation for direct lay and also provides security for the mortars and personnel carrying the ammunition.

Indirect fires must be coordinated with the SBF position for easier suppression. The minimum safe distance (MSD) of a weapon should be considered in the planning to allow the assault element to move as close to the objective as possible without risking fratricide. One technique, called the "onion peel," has all available indirect fire assets initially massed on the objective. As the assault force moves closer to the objective, the larger rounds (105mm, 81mm) are shifted to other targets. The 60mm mortar, which has the shortest MSD, are the last to be shifted. Since the bursting radius of the 60mm white phosphorus (WP) round is less than that of its high explosive (HE) round, it can be directed closer to troops. WP is also effective for marking targets for CAS or attack helicopters. The complexity of such synchronization is another argument for positioning the FO and 60mm mortars with the SBF element.

A leader for the SBF element must be designated. In a company attack, this task is usually given to a platoon leader. In a platoon attack, the platoon sergeant

is the most logical choice because of his experience, but he may be better employed at the casualty collection point or with the reserve. A unit that has a weapons squad leader should consider tasking him to lead the SBF. Whoever is given the mission must be able to communicate with the platoon leader and accomplish several tasks at the same time.

In a hasty or deliberate attack, the SBF element must be in a position that allows the soldiers and leaders to see both the objective and the approach axis of the assault element. There are situations in which this may not always be possible, but the inability to observe the objective may necessitate the premature lifting or shifting of fires, which may allow the enemy time to resume his defensive posture.

When planning for an SBF mission, the leader must conduct a good terrain analysis to determine whether he can see the objective and effectively place fire on the enemy. He should avoid ground that is lower in elevation than the objective and also positions from which the assault approach masks the support fires. Additionally, he must ensure that his position has adequate cover and concealment.

Once the SBF leader has identified the objective, he must determine the enemy's strength and the location of crew-served weapon positions and weapons that will immediately affect the assault element. He must also identify key terrain that will support isolation of the point of penetration. At this time, the leader must identify where he wants fires concentrated and the limits of the sector.

Once the attack begins, there are several techniques that assist in the distribution of fires. The leader may fire single tracers at the limits while yelling, "Right, center, left," as he engages points within the sector. (Tracers can be effective during daylight if fired high into a wooded or dark background.) He could direct an M203 gunner to fire smoke or ground illumination at the limits. If the situation allows, he could also identify terrain features or enemy posi-

tions as target reference points and have the team leaders disseminate the information to the individual soldiers. Most important, the SBF leader must designate the decisive point where fires are to be concentrated. One method is to fire tracers at the position with his weapon set on burst. At night, the AN/PAQ-4A infrared aiming light may be used to designate targets for soldiers who have AN/PVS-7 night vision goggles.

The best support positions will fail if the soldiers run out of ammunition before the assault element makes it to the objective. It is therefore critical that rates of fire be controlled. Every soldier should know the cyclic, sustained, and rapid rates of fire for all platoon weapons. One technique is to have soldiers count between bursts of their weapons to obtain the desired rate of fire. M249 and M60 gunners will achieve a sustained rate of fire if they count four seconds between bursts and the rapid rate by counting two seconds between bursts. The sustained rate of fire for an M16A2 is one round every four seconds. During training, leaders should have soldiers actually count out loud, "One thousand one, one thousand two,...."

Units should have signals that tell the soldiers the rate at which to fire their weapons. One technique is to use a whistle—a long blast for rapid rate and several short blasts for sustained rate. Or this can be done verbally by passing the information down the support line. Rates of fire can also be controlled by designating certain soldiers to fire their weapons only on semi-automatic and others to fire only on burst. M60s and M249s should alternate fires, making the guns "talk" to one another.

When rates of fire are not controlled, a lull in fire usually occurs, and an unplanned lull at the moment the assault begins can be disastrous, allowing the enemy to reposition or effectively engage the assaulting force. Soldiers must recognize lulls and pick up the fire. For instance, an M249 gunner who no longer hears the M60 should increase his rate of fire.

As important as knowing rates of fire

is knowing when to increase or reduce the rate. When initiating the support, the volume of fire should be high to get enemy soldiers' heads down and preoccupy them with the support position instead of the assault. As the assault element begins its movement to the assault position, the volume of fire should decrease but still be effective enough to prevent the enemy from repositioning or observing the assault force. A fire command to help this is "watch and shoot," which tells the soldiers to fire only at observed targets.

Another technique is for the SBF leader to order an individual soldier to fire a well-aimed shot at a target while the rest of the soldiers hold their fires. For instance, the leader may say, "Jones, fire a three-round burst at the center bunker. All others hold." The leader continues this at random intervals so the enemy cannot identify a pattern. The key is to disrupt the enemy's synchronization and prevent him from locating the assault force. Before the assault begins, the volume of fires should increase to its highest pitch and precision to ensure that the enemy cannot effectively maneuver or engage the assault force.

When the assault begins, fires should be walked across the objective instead of being lifted. Ideally, soldiers in the SBF position should be able to observe the assault force; therefore, the lead assault element must have a means of marking their advance. During daylight, this may be a VS-17 panel or a pre-designated color of smoke. During hours of limited visibility, infrared strobes or chemlights, or even colored chemlights may work. If the soldiers in the SBF position cannot see the assault force, the leader must maintain FM communications with the assault leader.

The SBF leader must also be able to communicate with the soldiers at his position, and this is difficult, given the noise the weapons create. It is not as drastic with a squad as it is with the platoon or company SBF mission. For larger SBF elements, one technique is to "pyramid" leadership throughout the line: The SBF leader is positioned to the

rear with his RTOs and the FO so he can observe and listen to the radio. The squad leaders are centered behind their squads listening on the AN/PRC-126. Team leaders are located with their soldiers close to the squad leader. Instructions given to the SBF leader by FM radio are relayed to the subordinate leaders who then direct the individual soldiers. The soldiers should echo the

commands to ensure that they understand them.

The mission to overwatch and support by fire is probably the most difficult—and potentially the most important—one a unit can receive. The perfect attack would find the assault element moving unencumbered onto an objective where all the enemy had been destroyed or forced to withdraw, and this ideal can be

realized through good training, sound SOPs, and excellent leadership.

Captain Fred Johnson is an observer controller at the Joint Readiness Training Center. He previously served as a rifle platoon leader in the 2d Battalion, 22d Infantry, 10th Mountain Division, and as a rifle company commander in the 3d Battalion, 187th Infantry, 101st Airborne division. He is a 1985 ROTC graduate of Wofford College.

SWAP SHOP

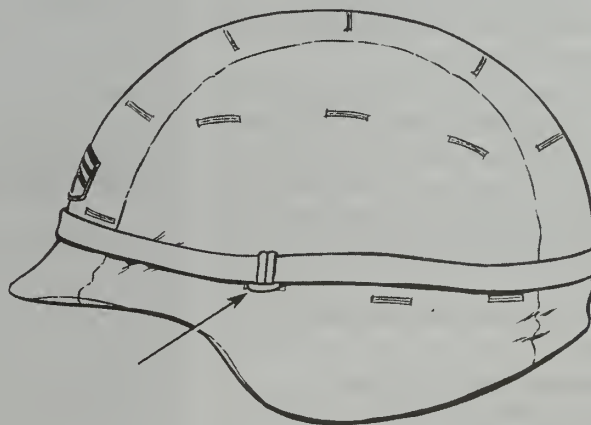


PASGT HELMET BAND RETAINER

According to Kathleen Swift, a clothing designer at the U.S. Army Natick Research, Development, and Engineering Center, here's how you make a helmet band retainer for the PASGT (personnel armor system, ground troops) kevlar helmet:

- Cut two 29-inch pieces of gutted 550 cord.
- Fold the 550 cord in half.
- Pass the bight (or fold) in the cord down behind the helmet band on the side of the helmet, above the location of the chin strap, from top to bottom.
- Pass the free running ends of the cord through the loop formed in the cord. This will form a girth hitch over the helmet band.

- Unfasten the hook and pile fasteners that secure the helmet cover to the helmet.
- Pass the free ends of the 550 cord down through the buttonhole on the cover directly below the band.
- Feed the ends down to the rim of the helmet, pass them to the inside of the helmet, and secure with a square knot around the suspension band where it is bolted to the helmet. (Do not secure to the sweat band.)
- Tie off the free running ends with half-hitches and cut. Sear remaining 550 cord so no more than one-half inch remains.
- Repeat this process on the opposite side of the helmet.
- Resecure helmet cover with the hook and pile tabs.



(Submitted by Public Affairs Office, U.S. Army Natick Research, Development, and Engineering Center, Natick, Massachusetts.)

OFFICERS CAREER NOTES



SPECIAL OPERATIONS ASSIGNMENT OPPORTUNITIES

Assignments to the U.S. Army's 1st Special Forces Operational Detachment-Delta (1st SFOD-D) provide realistic training and experience that is personally and professionally rewarding. These assignments require an extensive screening process and the successful completion of a demanding three-to-four-week assessment and selection course, followed by a six-month operator training course.

Upon successful completion of these courses, officers are assigned to operational positions in the unit. These positions offer added opportunities for command and service as executive officers or operations officers. In addition to assignments available through their basic branches, these officers will also have access to a wide variety of staff positions at Department of Defense, Joint Chiefs of Staff, Department of the Army, U.S. Army Special Operations Command, U.S. Special Operations Command, other joint headquarters, and interagency positions as well.

To qualify, a volunteer must meet the following prerequisites:

- Be male, U.S. citizen, at least 22 years of age, in the rank of captain or major (branch immaterial), with at least 12 months of successful command as a captain and at least two years active service remaining upon selection to the unit.

- Be a college graduate (BA or BS).
- Pass a modified HALO/SCUBA Physical and Eye examination.

- Be airborne qualified or volunteer for airborne training.

- Pass a background security investigation and have at least a Secret clearance.

- Have no history of recurring disciplinary action.

- Pass the five-event physical fitness qualification test (inverted crawl; run, dodge, and jump; push-ups; sit-ups; and two-mile run) and a 100-meter swim test, both tests while wearing battle dress uniform and boots.

The 1st SFOD-D conducts world

recruiting twice a year, from March through July for the fall course and from September through January for the spring course. The 1st SFOD-D recruiters can be reached at DSN 236-0689/0549 or commercial (919) 396-0689/0649.

CONTACTING INFANTRY BRANCH

Infantry Branch has undergone major internal restructuring and significant

personnel changes. For better access and service when contacting the personnel of Infantry Branch and other members of your PERSCOM management team, please use the directory shown here.

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E-MAIL: userid@HOFFMAN-EMH1.ARMY.MIL			
PROFS: AEDDC1A(userid)			

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FA 46, 47	3123
FA 49	3113
FA 48D,I,J	3133
FA 39, 50, 54	3115
FA 45, 41	3112
FA 53	2800

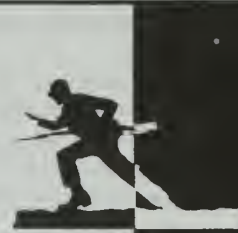
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TO ORDER FICHE/ORB:

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Alexandria, VA 22332
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BOOK REVIEWS



During the past few months, *INFANTRY* has received many books for review on the subject of the 6 June 1944 invasion of Normandy by Allied forces. The following are some that should be of interest to our readers:

D-Day, 1944. Edited by Theodore A. Wilson. Published for The Eisenhower Foundation, Abilene, Kansas, by the University of Kansas, 1994. 420 Pages. \$45.00, Hardcover; \$22.50, Softbound. This book is a revised edition of *D-Day: The Normandy Invasion in Retrospect*, published in 1971, with an added foreword by John S.D. Eisenhower. In it, 20 noted authors—including Robin Higham, Forrest C. Pogue, and Mark A. Stoler—reassess Operation OVERLORD and show why it retains such a prominent place in our national memory. This text is noteworthy because it draws upon a number of newly available sources to examine coalition warfighting, a concept most recently exploited to great advantage in the Gulf War.

The Longest Day. By Cornelius Ryan. Touchstone Books, 1994. 350 Pages. \$11.00, Softbound. This is, of course, a reprint of the classic book originally published in 1959, and is well worth the modest price. The author complements accounts of the events on D-Day with vignettes narrated by the soldiers and civilians who lived through the invasion. If you haven't read the original edition, or if you want to again experience the excitement and heroism of those days in the early summer of 1944, this is the book that will take you back.

D-Day. Those Who Were There. By Juliet Gardiner. Collins & Brown. Distributed by Trafalgar Square (North Pomfret, VT 05053), 1994. 192 Pages. \$34.95. This book is about the way preparations for the invasion of Normandy, and the final assault, affected the lives of the people of Great Britain, and of the American forces. The author allows "those who were there" to tell the story, in their own words, wherever possible. Beginning with the dark days following the evacuation of more than 338,000 troops from the beaches of Dunkirk and continuing through the disastrous raid on Dieppe, the author recounts events, using a number of excellent, previously unpublished

photographs and contemporary cartoons to complement the interviews and first-hand accounts. Among the last observations in the book are those of British servicemen held prisoner by the Japanese; the reactions of these men and their captors to news of the invasion remind the reader that in the Pacific Theater the war was as much a reality as on the beaches of France. Great book; buy it.

D-Day and the Invasion of Normandy. By Arthur Kemp. Abrams, 1994. 192 Pages. \$12.95, Softbound. This compact book tells the story of D-Day from both Allied and German points of view. It is chiefly a collection of superb photographs and maps, both black-and-white and color, on high-quality coated paper, which is rare for a softbound book. Imaginative illustrations vividly portray the terrain and the sequence of actions during the invasion, and the remarkable quality of the photographs will capture the reader's attention. While its size prevents detailed descriptions of D-Day's major actions, it is sufficiently well-written both to entertain a reader unfamiliar with the invasion and to evoke the desire to learn still more about what happened 50 years ago on those fire-swept beaches.

D-Day Normandy: The Story and Photographs. By Donald M. Goldstein, Katherine V. Dillon, and J. Michael Wenger. Brassey's (US), 1994. 102 Pages. \$30.00. This official 50th anniversary volume of The Battle of Normandy Foundation, measuring 8 1/2 x 11, tells the entire story in maps and more than 400 black-and-white photographs—American, German, and Allied. Clearly one of the best pictorial histories I've seen, this volume communicates a sense of being in the midst of the action and is well worth the purchase price.

D-Day Plus Fifty Years. Text and Photography by Henry Rasmussen. Howell Press (1147 River Road, Suite 2, Charlottesville, VA 22901), 1994. 192 Pages. \$29.95, Hardcover. This large-format book (10 1/4 x 10 1/4), commemorates the 50th anniversary of the invasion with a mixture of old and new photographs, 166 of them in color and 205 in black-and-white, and all of them fine-art quality. The historical narrative takes the reader through each stage of the

invasion, comparing armies, leaders, tactics, and weapons. The juxtaposition of historical and present-day photographs of the landing sites, the emplacements, and items of equipment serve well to bridge the gap of 50 years and to impress the reader with a sense of being present on that portion of the Channel Coast where history was made. This was a difficult book to put down.

The D-Day Atlas: The Definitive Account of the Allied Invasion of Normandy. By John Man. Facts on File, Inc., 1994. 143 Pages. \$15.95, Softbound. An unusually concise and well-written text on the Normandy invasion, this is an excellent choice if the reader is looking for an affordable and easily readable book on D-Day. The maps are plentiful and superbly drawn, complementing the author's narrative of the most significant events from 6 June 1944 until the liberation of Paris at the end of August. A number of hitherto unpublished photographs convey the immediacy of the bitterly fought engagements and tastefully present the human dimension of war. The presentation of combat from both Allied and the German perspectives affords a balanced understanding of the momentous events that changed the course of history, and portrays the staggering losses inflicted on the Wehrmacht during those two months. Such appendixes as the schematic of the Allied and German command structure, the chronology of events from 23 January to 1 September 1944, and the listing of operational code names for both sides contribute to the clarity of the book. Buy it, read it, put it on your coffee table for others to enjoy.

We are continuing to receive books on D-Day and will be providing full reviews on some of them in later issues of *INFANTRY*.

Expert Witness: A Defence Correspondent's Gulf War, 1990-91. By Christopher Bellamy. Brassey's (UK), 1993. 252 Pages. \$29.95. Reviewed by Major Harold E. Raugh, Jr., United States Army.

Christopher Bellamy, instead of writing his account of the second Persian Gulf War, in 1991, immediately after its conclusion,

waited and continued to observe related events, hoping "to identify errors and misperceptions and to give a more complete picture of what happened than would have been possible had the book been completed sooner."

He brings a great deal of expertise to this study, including previous service as an officer in the Royal Artillery; a civil servant in the Ministry of Defence; a Ph.D. recipient and senior research analyst at the University of Edinburgh; and Defense Correspondent for the British newspaper, the *Independent*. As Defense Correspondent, he was based in Saudi Arabia covering the war and later returned to the Middle East for a brief visit to cover Operation PROVIDE COMFORT to the Kurds.

After providing an overview of the conflict and placing it within its historical and cultural context, Bellamy superbly chronicles the evolution and current understanding of the operational level of war—a real strength of this study—and its impact on the planning of the campaign. Having written his dissertation on the Soviet view of the character of future war, he introduces Soviet military tenets of deep encirclement and the use of the operational maneuver group, and juxtaposes this with U.S. AirLand Battle doctrine. These concepts clearly influenced the campaign, which was executed in the vast expanses of flat, featureless desert terrain, with the Coalition fully using its overwhelming superiority in firepower, technology, and "brainpower."

The entire narrative reflects the author's deep understanding of warfare and knowledge of military technology. The latter is reinforced by the adroit use of JSTARS (joint surveillance target radar attack radar system) pictures that, according to the author, "are the manifestation of a matching of military theory and practice of which military theorists and historians have long dreamed." A detailed chronology, some 40 excellent maps, and almost 50 photographs supplement the text. Appendixes include the text of General H. Norman Schwarzkopf's 27 February 1991 Central Command news briefing, and ground, air, and naval orders of battle.

The story is not tabloid journalism or sensational reporting, but a uniformly superb chronicle and an insightful assessment of the 1991 Coalition victory in Southwest Asia. As such, it makes a solid contribution to the literature of the conflict and deserves a wide readership. *Expert Witness* easily falls into the category of objective and thorough books

that a reviewer can fully recommend as being well worth the money.

Aces Against Japan: The American Aces Speak, Volume I. By Eric Hammel. Presidio Press, 1992. 318 Pages. \$24.95. Reviewed by Lieutenant Colonel Jack Mudie, U.S. Air Force, Retired.

If you would like to read one book that will give you a broad overview and yet a detailed look at what the fighter pilot's air war was like in the Pacific Theater during World War II, this is the book. Eric Hammel is an eminent military historian and interviewer whose 40 individual stories of Navy, Marine, and Army Air Force pilots are smoothly put in chronological order from the initial action over Pearl Harbor to the final dogfight over Kyushu.

Each chapter covers a different phase of the war and includes up to four individual oral histories in which each pilot describes his own combat experiences, which keeps the reader apprised of the changes in equipment and tactics as the war progresses. Each of the 40 individual air-to-air actions is a surprisingly different story.

What results is a highly readable history in which the main players are primarily American junior officers who, initially, pit their individual flying abilities against unexpectedly skilled Japanese pilots in aircraft that could outperform their own. This mismatch changed appreciably as improved U.S. aircraft and experience gradually took their toll. Attrition reached the stage where newer Japanese pilots had far less flight training before entering combat. Nevertheless, enough veteran Japanese pilots remained to make every combat action a mixture of uncertainty, surprise, and fear, along with the anticipation and exhilaration of occasional victory.

Preceding and following each narration is an italicized addition by Hammel describing what the pilot was doing before his military service and what he did after it—a unique format and style that makes each pilot a distinct individual. This is an excellent book that puts a different perspective on the "Hot-shot Charley" image of many World War II fighter aces. (Volume II, *Aces Against Germany*, is also available from the publisher.)

Riviera to the Rhine. By Jeffrey J. Clarke and Robert Ross Smith. U.S. Army in World War II, The European Theater of Operations. U.S. Army Center of Military

History, 1993. CMH Pub 7-10. GPO S/N 008-029-00213-2. 605 Pages. \$34.00. Reviewed by Lieutenant Colonel Albert N. Garland, United States Army, Retired.

This is the final volume in the Center of Military History's series of operational histories treating the activities of the U.S. Army's combat forces during World War II.

The authors first discuss the convoluted 14-month decision-making process that ended in one of the major compromises of the Anglo-American partnership during the war. (In short, the United States wanted to do the operation, while the British did not.) They move on to describe the command structure and organization of the forces, the invasion plans, the assault itself, and the follow-on campaigns in southern France, the Vosges Mountains, and Alsace.

Excluding the pages devoted to the decision-making process, the volume covers the period from August 1944 (the invasion began on 15 August) to early March 1945. (Although the original code name assigned the operation—ANVIL—was changed to DRAGOON shortly before the invasion, the authors stay with ANVIL. Some historians use ANVIL/DRAGOON, others DRAGOON.)

The authors also include an excellent evaluation chapter in which they discuss command personalities and consider the strengths and weaknesses of the U.S. and German soldier, a subject of considerable discussion during the past 50 years.

As the authors point out, ANVIL is probably the least known of the major Allied operations in the European theater. It has also remained one of the most controversial. They conclude that the forces engaged in ANVIL "conducted one of the most successful series of campaigns during World War II," and that "perhaps the greatest contribution of the southern invasion was placing a third Allied army group. . . with its own independent supply lines, in northeastern France when the two northern Allied army groups were stretched to the limit in almost every way."

This is a well-done, if long overdue, volume that has 35 excellent maps and numerous photographs to complement the fine narrative. It has been produced in the Center's usual professional manner and is worthy of study by all U.S. military personnel.

Sam Houston: A Biography of the Father of Texas. By John Hoyt Williams. Simon & Schuster, 1993. 448 Pages.

\$25.00. Reviewed by Colonel Cole C. Kingseed, United States Army.

Sam Houston was one of the most remarkable figures of American history. Even before his decisive victory over Mexican General Santa Anna at San Jacinto in 1836, he had lived a full life that included suffering a near mortal wound in the War of 1812, a term as both congressman and governor of Tennessee, and a member of Andrew Jackson's inner circle. Simultaneously, his near life-long addiction to alcohol resulted in the dissolution of his first marriage and led to a scandal that drove him from the governorship of Tennessee. Still, following the battle that gave birth to the Republic of Texas, he served several terms as President of Texas, and later served the State of Texas as governor and U.S. senator.

It was this duality that led author John Hoyt Williams to explore the career of the man he terms "contradiction incarnate." In this compelling biography, Williams seeks to dispel the myths surrounding Houston while clarifying his major achievements and failures. Using a wide range of primary and secondary sources, Hoyt succeeds admirably in presenting a balanced assessment of his controversial subject.

The Houston who emerges from these pages is hardly the legendary figure of Texas lore. Driven by an early desire to succeed, he found refuge in the military and politics, chiefly under the patronage of Andrew Jackson, the hero of the American frontier. Using Jackson for political refuge, Houston emerged as a leading figure of Tennessee politics, until his overindulgence in alcohol led to repeated scandals and forced him into obscurity with his adopted Cherokees. Known as "the Raven," Houston more than once represented the Indians' interest in Washington, and in the process gained an extraordinary number of political enemies.

It was Texas, however, that gave birth to the Houston legend. An active land speculator who had visions of creating a vast trans-Mississippi state, Houston was a vocal leader of the War Party that advocated independence from Mexico. As commander-in-chief of the armies of Texas, his inability to control the semi-independent commands of William Barret Travis and James W. Fannin was partly responsible for the debacles at the Alamo and Goliad. Even his decisive victory at San Jacinto haunted him in later life, as political opponents cried that "the battle made Sam Houston" and that "Sham" Houston's performance as a tactical commander was mediocre at best.

Houston's later life revolved around

Texas. An ardent Unionist, he argued forcibly against secession and relinquished the governorship rather than swear an oath of allegiance to the Confederacy. Forced from office, he remained in self-exile until his death in 1863. He had said the Confederacy was doomed to failure and lived long enough to witness that failure. Although he, more than any other man, had been responsible for the entry of Texas into the Union, he reasoned that it was far better for Texas to resume its former independent statehood than to cast its lot with the Confederacy.

In the final analysis, the reader of this biography is no closer to understanding Houston's complexity than at the beginning. Williams seems equally perplexed but suggests two characteristics as possible explanations for unraveling the mystery. The keys, states Williams, lie in Houston's penchant for secrecy—or for hinting, rather than revealing—and his chronic vacillation at crucial moments. It is as if Houston wanted others to do what he only imagined, whether it was leading an expedition to conquer Mexico or actively seeking the presidency of the United States. Williams concludes that Sam Houston was not what he seemed to be to most people, and therein lies the controversy.

Daring to Win: Special Forces at War. By David Eshel. Arms & Armour Press, 1992. 214 Pages. \$27.50. Reviewed by Leroy Thompson, Manchester, Missouri.

This book on special operations of World War II and later is designed more for the general reader than for the infantryman; most of the 39 operations examined are summarized, but few conclusions are drawn that are applicable to the military professional.

The book is divided into four sections: "Great Commando Actions, which covers raiding forces in World Wars I and II; "Post-War Elite Actions," which deals with modern raiding missions; "Raiders from the Sky," which deals with aviation missions; and "Warriors of the Sea," which covers seaborne operations.

Many of the most famous World War II operations are covered, including Eban Emael, Vaagso, Bruneval, Dieppe, Gran Sasso, and Arnhem. In the post-World War II period, on the other hand, the fact Eshel was an Israeli officer is obvious from the preponderance of coverage given to operations by forces of the Jewish state. In fact, five of the 12 postwar ground special operations missions in the book are Israeli. On the

positive side, the coverage of these missions is the best in the book because of Eshel's access to Israeli sources. On the negative side, for a work intended to give an overview, it neglects many scenarios that were highly important in the development of special operations theory and practice. For example, SAS operations in Malaya, Borneo, and Oman are ignored, as are Soviet special operations in Afghanistan.

The maps in the book help clarify operations but maps are included with only a few of the chapters. I would have liked to see maps with virtually every chapter. Once again, I would have liked to see a broader selection of operations to give a better overview of tactical developments. In the section on naval special operations, for example, the U.S. Navy Sea, Air, Land Forces (SEALs) and the British Special Boat Service are completely ignored.

I recommend *Daring to Win* as an interesting book from which to get a superficial overview of special operations for those with little knowledge of the subject. But military professionals or students of special operations will find little in it that is new, other than perhaps a few details on Israeli special forces.

The Defense of Hill 781: An Allegory of Modern Mechanized Combat. By James R. McDonough. Presidio Press, 1988. 202 Pages. \$12.95. Reviewed by Captain Kelly C. Jordan, Watertown, New York.

Although this book has been around for a while and continues in print, I do not believe it has received the attention it deserves. A modern version of the classic *Defense of Duffer's Drift*, it offers many valuable tactical lessons for today's infantry leader.

The author uses the National Training Center (NTC) as the setting for his tale, in which a deceased airborne lieutenant colonel, A. Tack Always, must serve time in a kind of purgatory (the NTC) to atone for his lifelong sin of regarding with contempt anyone outside the airborne community. He takes command of a balanced mechanized task force (equipped with M1 tanks and M2 Bradley fighting vehicles) and is told he cannot leave until he has forged it into a disciplined combat unit that can soundly defeat a determined enemy force. As he attempts to train and lead his unit to victory, Colonel Always experiences the many frustrations of mechanized combat, which are presented at the end of each chapter as concise lessons learned that are remarkably illuminating.

The author makes valuable observations regarding the importance of first impressions and early assessments and goes on to highlight the need for the commander's initial guidance for an operations order and his involvement in the entire orders process.

McDonough, while recounting the commander's dawn attack against an opposing force (OPFOR) reinforced motorized rifle company in which he suffers his first crushing defeat, emphasizes the importance of intelligence, task organization, the commander's position on the battlefield, and massing combat power. Then he introduces the reader to the most confusing of times at any combat training center, the change of mission. He portrays in detail the task of reconstituting a unit while maintaining security and preparing for a subsequent mission.

He goes on to a detailed discussion of standard infantry missions—a defense in sector, a deliberate attack, a night attack, and a battle position defense—conducted in rapid succession. In each instance, the task force commander incorporates the lessons learned from the previous battle only to encounter new and more difficult hardships. The author covers a wide range of operations including the seven battlefield operating systems, tactics, principles of war, and soldier issues in a readable and comprehensive fashion.

Instead of introducing numerous ancillary characters to demonstrate certain points, he uses Command Sergeant Major Hope and Specialist Sharp (the commander's driver) to bring out the NCO and soldier points of view. CSM Hope offers insight into the soldiers' lot during an NTC rotation and relays the effects of poor planning and leadership on the average infantryman. Sharp's comments on morale and unit cohesion add a new dimension to the aspect of sustained operations. Few authors recognize the importance of such issues, and fewer still communicate it as clearly.

Colonel Always ultimately leads his task force to victory against the OPFOR by executing a splendid battle position defense anchored around Hill 781 and wins his discharge from purgatory. By gaining his release in this fashion, Always conquers his former prejudices and gains a greater understanding of the nature of war. He is a better commander with a deeper appreciation for the complexities of modern mechanized combat. He has learned the value and adaptability of Air Land Battle doctrine and has demonstrated how a disciplined unit can apply sound doctrine to any tactical situation.

This book is less an NTC account than a tactical primer on how to assemble a collective force of decentralized units, synchronize it with the common vision of a commander's intent, and energize it with the freedom to act to produce a superior combat unit. The lessons are fundamental and applicable to leaders at every level, beginning with the platoon.

I believe this book is essential reading for all professionals, and I highly recommend it for anyone with a light infantry background who is about to embark upon a tour of duty with a mechanized infantry unit. The colonel's final realization that all infantry units are essentially the same, especially in an Army where infantry officers are bound to serve in several different types of units is the book's most valuable lesson.

***The Trail: A History of the Ho Chi Minh Trail and the Role of Nature in the War in Viet Nam.* By Richard L. Stevens. Garland Publishing, 1993. 258 Pages. \$35.00.** Reviewed by Dr. Joe P. Dunn, Converse College.

This book, which had such promise, is a great disappointment. As the author correctly asserts, the struggle for control of the so-called Ho Chi Minh Trail was the most significant military theater of the war, "strategically. . .the only battle. . .that really mattered." It was the backbone of the North Vietnamese effort, literally the structure to which everything was tied, the nerve center, and the lifeline. To sever it would have been a deadly blow. But the author argues that the United States was doomed to failure because no matter what it did, it could not cut the Trail, and thus could not win the war. In his words, "We fought against nature while there, and we lost because we could not conquer clouds, trees, rain, night, heat, microorganisms, and mountains."

An objective study of the origins, development, and growing centrality of the Trail to the Communists' war effort, and the United States' failed efforts to neutralize it would have been an important contribution to Vietnam War literature. The author's credentials were well-suited for the undertaking. He first went to Vietnam in 1960 as a young Marine and later returned as a civilian with various agencies, including the Agency for International Development and the Foreign Service from 1965 through 1970. During this time, he went on reconnaissance forays along the Trail and became absorbed with the subject.

Although the thesis is plausible and the book provides some interesting insights

about the Trail, the author badly overextends himself. He pummels the reader with his thesis and pushes it much too far. He defines the book as ecohistory, the struggle between man and nature, and elevates his lessons to mythic proportions: "We—as man—will lose in our continuing war on nature all over the world." Indeed, he defines his effort as "an attempt at atonement" by one "who brought death and destruction to the Trail." His writing style—present tense through the persona of the Trail itself—fails miserably.

Someday, a history of the Trail will be written that divulges the secrets of those who fought their war on that logistics highway and the unsuccessful efforts of electronic warfare, high lethal technology, and clandestine operations to combat the war's central nerve system. Sadly, this is not that book.

RECENT AND RECOMMENDED

***Saddam Hussein's Gulf Wars: Ambivalent Stakes in the Middle East.* By Miron Rezun. Praeger, 1992. 164 Pages. \$39.95.**

***Philip II of Macedon: A Life From the Ancient Sources.* Compiled, edited, and translated by Alfred S. Bradford. Praeger, 1992. 224 Pages. \$39.95.**

***Coast Watching in the Solomon Islands: The Bougainville Reports, December 1941-July 1943.* Edited by A.B. Feuer. Praeger, 1992. 208 Pages. \$42.95.**

***The Duke of Wellington and the British Army of Occupation in France, 1815-1818.* By Thomas Dwight Veve. Contributions in Military Studies, No. 114. Greenwood Press, 1992. 240 Pages. \$45.00.**

***African American Soldiers in the National Guard Recruitment and Deployment During Peacetime and War.* By Charles Johnson, Jr. Greenwood Press, 1992. 232 Pages. \$49.95.**

***American Merchant Ships on the Yangtze, 1920-1941.* By David H. Grover. Praeger, 1993. 256 Pages. \$47.95.**

***Brave Men—Dark Waters: The Untold Story of the Navy SEALs.* By Orr Kelly. Presidio Press, 1992. 320 Pages. \$22.95.**

***Ramparts: A History of Fortification From the Renaissance to West Point.* By Marguerita Herman. Avery Publishing Group, 1992. 216 Pages. \$50.00.**

***The Laws of Land Warfare: A Guide to the U.S. Army Manuals.* By Donald A. Wells. Contributions in Military Studies, No. 132. Greenwood Press, 1992. 224 Pages. \$47.95.**

***The Spanish Armada of 1588: Historiography and Annotated Bibliography.* By Eugene L. Rasor. Bibliographies of Battles and Leaders, No. 10. Greenwood Press, 1992. 295 Pages. \$59.95.**

***Beyond Glasnost: Soviet Reform and Security Issues.* Edited by David T. Twining. Contributions in Military Studies, No. 127. Greenwood Press, 1992. 184 Pages. \$45.00.**

***The Odyssey of a U-Boat Commander: Recollections of Erich Topp.* By Erich Topp. Translated by Eric Rust. Praeger, 1992. 258 Pages. \$49.95.**

INFANTRY SCHOOL DIRECTORY

The following directory is offered as an aid to people in the field who may have questions they want to ask the various departments and divisions of the Infantry School. All telephone numbers are DSN (Defense Switched Network). To call the Fort Benning numbers on commercial lines, dial area code 706; then convert 835 prefixes to 545 and 784 prefixes to 544.

In addition to these points of contact, the Infantry

School maintains a hotline specifically to receive questions and comments from the field. The number is DSN 835-7693; commercial (706) 545-7693. Questions are recorded, and answers are returned within 48 hours. Lengthy questions or comments should be sent in writing to Commandant, USAIS, ATTN: ATSH-OTE, Fort Benning, GA 31905-5593.

Assistant Commandant

BG John J. Maher 835-5296

Deputy Assistant Commandant

COL Joseph C. Windle 835-5231

Combined Arms and Tactics Department

Director, COL Dale E. Roth 835-4539
Combined Arms and Leadership Division 835-5475
Doctrine Division 835-5783
Tactics Division 835-7076
Military History Division 835-7122

Directorate of Combat Developments

Director, COL William N. Patterson 835-1316
Clothing and Individual Equipment Division 835-6407
Electronics and Special Developments Division 835-4951
Firepower Division 835-1016
Infantry XXI Division 835-4658
Small Arms Division 835-1910
Test and Evaluation Division 835-2416

Directorate of Operations and Training

Director, COL Michael J. McKean 835-5717
Aviation Division 835-4680
Current Operations Division 835-7574
Evaluation and Staff Education Division 835-7617
INFANTRY Magazine 835-2350
National Infantry Museum 835-2958
Plans and Readiness Division 835-1612
Range Division 835-4619
Resource Management Division 835-4087
Systems Division 835-1619
Training and Analysis Division 835-5620
Training Support Center 835-2132

Dismounted Battlespace Battle Lab

Chief, COL Arnold J. Canada 835-2310
Battle Command Division 835-1816
Dismounted Forces Division 835-3080
Expanded Battlespace Division 835-4638
Land Warrior Simulation Integration Division (Future) 835-7000
Land Warrior Combatant Simulation Division (Current) 835-5942
Army Materiel Command Technical Liaison Office 835-4796

Infantry Training Brigade

Commander, COL Theodore R. Severn 784-9644
1st Battalion, 19th Infantry 784-9179
3d Battalion, 32d Infantry 784-9253
1st Battalion, 38th Infantry 784-8717
1st Battalion, 50th Infantry 784-9169
2d Battalion, 54th Infantry 784-9121
2d Battalion, 58th Infantry 784-9368
30th AG Battalion (Reception) 784-9902

Ranger Training Brigade

Commander, COL Galen Jackman 784-6980
4th Ranger Training Battalion (Benning Phase) 784-6720
5th Ranger Training Battalion (Mountain Phase) 797-3327
6th Ranger Training Battalion (Florida Phase) 872-1162
7th Ranger Training Battalion (Desert Phase) 979-9507

29th Infantry Regiment

Commander, COL Robert L. Jordan, Jr. 784-6008
Maintenance Management Division 784-6517
1st Battalion, 29th Infantry Regiment 784-4060
Co A (BIFV Company) 784-1450
Co C (BIFV Company) 784-1649
Co D (BIFV Company) 784-2584
Co E (BIFV Company) 784-3280
Bradley Instructor Company 784-6136
Bradley IFV New Equipment Training Team 784-6907
2d Battalion, 29th Infantry Regiment 784-6819
Co A (Land Navigation Committee) 784-6033
Co B (Antiarmor Committee) 784-6474
Co C (Small Arms Committee) 784-6823
Co D (Tactics/Sniper Training) 784-6006
Sniper School 784-7438
Co E 784-7206

11th Infantry Regiment

Commander, COL Walter Wojdakowski 835-4301
1st Battalion, 11th Infantry 835-1962
2d Battalion, 11th Infantry (IOBC) 835-1666
3d Battalion, 11th Infantry (OCS) 835-4711
1st Battalion, 507th Infantry (Airborne) 835-1035

NCO Academy

Commandant, CSM Willie G. Wells 835-2233

Special Assistants to the Commanding General

USAR, COL James D. Moore 835-6469
ARNG, (vacant) 835-5741

U.S. Army Physical Fitness School

Commandant, COL David M. White 835-6381

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